



# U.S. Virgin Islands DPNR

## Major Coastal Zone Management Permit Application— Tier 1

For a Proposed Solar Energy Facility  
with Battery Storage (Phase 1)

Parcel No. 3B & 2 Fortuna  
Estate Fortuna, St. Thomas, U.S. Virgin Islands

HTA Project No. 23.141001.00

**October 2025**

Applicant:

STF Solar, LLC

A Vlelectron, LLC Company



Trusted Experts | Innovative Results

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## L&WD Forms



**GOVERNMENT OF THE VIRGIN ISLANDS OF THE UNITED STATES  
DEPARTMENT OF PLANNING AND NATURAL RESOURCES  
DEVELOPMENT PERMIT APPLICATION**

**FORM L&WD-2  
PERMIT APPLICATION**

Date Received: \_\_\_\_\_

Date Declared Complete: \_\_\_\_\_

Permit No. \_\_\_\_\_

Application is hereby made for a Earth Change/Coastal Zone Permit

1. Name, mailing address and telephone number of applicant.

STF Solar, LLC - Subsidiary of Vlelectron, LLC  
c/o Christian Loranger  
5000 Est. Enighed, Ste 4a PMB 146 St. John, U.S.V.I. 830  
1-508-965-8637

2. Name, title, mailing address and telephone number of owner of property and of developer.

Owner

Seaview, Inc. - Lindberg Bay (3B) / William Dowling Jr. (Trustee) (2)

61 Broadway New York, NY 10006

N/A

Developer

STF Solar, LLC - Subsidiary of Vlelectron, LLC c/o Christian Loranger

5000 Est. Enighed, Ste 4a PMB 146 St. John, U.S.V.I. 00830

1-508-965-8637

3. Location of activity. Plot No. 104901013400 and 104404046300

Estate Fortuna Island Saint Thomas

4. Zoning District Residential Zone (R-1)

5. Name, mailing address and telephone number of project designer.

Holye Tanner & Associates, Inc. - 603-431-2520

183 International Drive, Suite 200, Portsmouth, NH 03801

6. Name, mailing address and telephone number of principal earthwork contractor.

7. Summary of proposed activity. Include all incidental improvements such as utilities, roads, etc. (Use additional sheets if necessary).

The proposed solar energy facility activities will involve: land clearing; additional site work such as gravel access road and installation stepping; general labor

and medium voltage electrical contractor with various components consisting of racks, panels, inverters, ac combiners, transformers and all medium voltage gear.

- 7a. State type of Land Uses as specified in the VI Zoning Law, which are applied for e.g., restaurant, hotel, single dwelling, etc.

Estate Fortuna is within Residential - Low Density Zone R-1 which permits the use of electrical substations as subject to conditions

set forth in Sections 231 and 232 of the VI Zoning Law.

**FORM L&WD-2/PERMIT APPLICATION  
CONT'D**

8. Date activity is proposed to start 10/22/2025  
1/1/2026, be completed 7/1/2026

9. Classification of minor or major permit. Check one:

☐ Minor Permit Application

☒ Major Permit Application

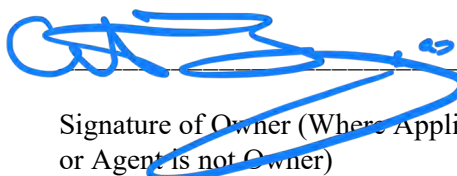
State below which criterion applies in making above check.

Public Hearing, Environmental Assessment Report and a Pre-Application Meeting are required for this project

10. Application is hereby made for a permit to authorize the activities described herein. I agree to provide any additional information/data that may be necessary to provide reasonable assurance or evidence to show that the proposed project will comply with the applicable territorial water quality standard or other environmental protection standards both during construction and after the project is completed. I also agree to provide entry to the project site for inspectors from the environmental protection agencies for the purpose of making inspections regarding this application, and that to the best of my knowledge and belief the information provided herein, is true, complete and accurate. I further certify that I possess the authority to undertake the proposed activities.

Signature of Applicant or Agent

Date

 as Manager, **STF Solar LLC**

10/14/2025

Signature of Owner (Where Applicant  
or Agent is not Owner)

**FOR DEPARTMENT USE ONLY  
Inspector Record**

Date Inspected: \_\_\_\_\_

( ) Permit Approved

( ) Permit Disapproved

Inspector's Remarks: \_\_\_\_\_

\_\_\_\_\_  
Inspector

\_\_\_\_\_  
Date

\_\_\_\_\_  
Commissioner, Planning & Natural Resources

\_\_\_\_\_  
Date

**GOVERNMENT OF THE VIRGIN ISLANDS OF THE UNITED STATES  
DEPARTMENT OF PLANNING AND NATURAL RESOURCES  
DEVELOPMENT PERMIT APPLICATION**

**FORM L&WD-3  
ZONING REQUIREMENTS TABLE**

The following table shall be completed by the applicant with entries as appropriate for the zoning district in which the activity is taking place. Not all the requirements will necessarily apply to a particular zone. Consult the Zoning Law. For your guidance also consult the zoning Requirement Matrix attached to the application forms, i.e., for a R-2 zone only items 1 through 11 will apply.

Applicants Name: Christian Loranger Signature:  Date: 10/14/2025  
STF Solar, LLC  
Location of Activity-Plot No. 104901013400 Estate Fortuna Island Saint Thomas  
104404046300

Zoning District: Residential Zone (R-1)

1. Proposed use (residential etc.) Alternative and Renewable Energy Systems - Electrical substations
2. Accessory use if any N/A
3. Number of on site parking spaces Existing N/A proposed N/A
4. Area of lot, (sq. ft. or acreage) total 9,173,736 sq. ft. (210.6 acres) - includes lot 2 & 3B
5. Area covered by proposed and existing buildings, (sq. ft.)  
N/A - no existing or proposed buildings
6. Setback of building from street property line, (ft.)  
N/A - no proposed building
7. Side yard setback (ft) N/A
8. Rear yard setback (ft) N/A
9. Height of building (ft. or stories depending on zone) N/A - no proposed building (panels set min. 24" above ground)
10. Proposed: Solar Energy Facility with Battery Storage
11. Lot width at street line (ft.) N/A - no residential lots proposed
12. Area of usable open space (sq. ft. and (%)) of lot \_\_\_\_\_
13. Persons per acre ratio N/A
14. Floor area ratio N/A
15. Number of onsite parking and loading spaces N/A
16. Building setback (yards 11, W-2 only) N/A

**FOR DEPARTMENT USE ONLY**

Inspector: \_\_\_\_\_ Date: \_\_\_\_\_ Permit No. \_\_\_\_\_

**GOVERNMENT OF THE VIRGIN ISLANDS OF THE UNITED STATES  
DEPARTMENT OF PLANNING AND NATURAL RESOURCES  
DEVELOPMENT PERMIT APPLICATION**

**FORM L&WD-4  
MAJOR PROJECT SUMMARY DATA**

**Section I. Applicant**

1. Name, address and telephone number of applicant.

STF Solar, LLC - Subsidiary of Vlelectron, LLC (Applicants and Developers)

5000 Est. Enighed, Ste 4a PMB 146 St. John, U.S.V.I. 00830

1-508-965-8637

2. Name, address and telephone number of owner of Property and of developer.

Seaview, Inc. - Lindberg Bay (3B) / William Dowling Jr. (Trustee) (2)

61 Broadway New York, NY 10006

N/A

**Section II. Summary of Proposed Development**

3. Describe the proposed development

The proposed development is a solar energy facility with battery storage anticipated to generate clean energy

to the Water and Power Authority (WAPA) grid while intended to work within the existing grades and outside the flood zone

to minimize the impacts on the surrounding land. Appropriate screening, stormwater and erosion control measures

will be implemented to limit visibility from surrounding properties and ensure all impervious cover is addressed, if applicable.

**Section III. Description of Proposed Development**

4. Name of development Fortuna Solar Energy Facility with Battery Storage

5. Plot No. 104901013400 and 104404046300

6. Zoning District: Residential Zone (R-1)

7. PWD Map No. \_\_\_\_\_

8. Proposed use (residential, etc. as listed in Zoning Law): \_\_\_\_\_

Estate Fortuna is within Residential - Low Density Zone R-1 which permits the use of electrical

substations as subject to the conditions set forth in Sections 231 and 232 of the VI Zoning Law.

9. Accessory use if any N/A

**FORM L&WD-4**  
**MAJOR PROJECT SUMMARY DATA Cont'd**

10. Area of Lot(s) (acreage) The Total acreage of the Fortuna Estate site is approximately 210.6 acres; where lot 3B and 2 are approximately 83.4 acres and 127.2 acres, respectively.
11. Area covered by existing buildings (sq. ft.) N/A - no existing buildings
12. Area covered by proposed buildings (sq. t.) N/A - no proposed building(s)
13. Floor area total N/A
14. Floor area ratio (B-1, B-2 zones only) N/A
15. Number of buildings N/A
16. Number of units total N/A
- |                                     | Person     | Persons                  |
|-------------------------------------|------------|--------------------------|
| 17. Schedule of units: Efficiencies | _____      | x 1.5 Unit _____ = _____ |
| 1 bedroom                           | _____      | x 2 _____ = _____        |
| 2 bedroom                           | _____      | x 3 _____ = _____        |
| 3 bedroom                           | _____      | x 4 _____ = _____        |
| Other                               | _____      | x _____ = _____          |
|                                     | <u>N/A</u> |                          |
| Total Persons                       | _____      |                          |
18. Number of on site parking and loading spaces N/A
19. Maximum building height (stories/ft) N/A - no proposed building (panels set min. 24" above ground)
20. Adjoining property land use(s) The majority of adjoining properties of Fortuna 3B & 2, Fortuna Estate have a land use designation of Low Density (District 2), while some properties to the north have a land use designation of Moderate Density (District 3) and to the east a land use designation of Conservation (District 1).
21. Setback of building from street property line (ft) N/A
22. Sideyard setback (ft) N/A
23. Rear yard setback (ft) N/A
24. Density (person/acre) N/A
25. Area of usable open space (sq. ft. % of lot) \_\_\_\_\_

**FORM L&WD-4**  
**MAJOR PROJECT SUMMARY DATA Cont'd**

**Section IV. Comments**

26. Proposed Potable Water Supply (method & quality estimate gal/day)  
N/A

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27. Proposed Sewage Treatment (method & quality estimate gal/day)  
N/A

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28. Proposed Solid Waste Disposal (method & quality estimate lbs/day)  
N/A

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29. Proposed Electrical Supply (method & demand estimate KWH for single & 3 phase)  
The proposed ph 1 solar facility anticipates generating 20.16MWdc which is then inverted to 18MWac (5.2MWac to WAPA Grid and remaining stored in on-site batteries). 3-phase supply with an estimated 36.8 kWh.

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30. Air Conditioning (method & demand estimate (KWH)  
N/A

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31. Other Utilities A connection to the existing WAPA grid will be required to allow the stored energy from the solar facility to fed the grid at a maximum allowed rate per any grid interconnection study performed for the area. The total site (Phase 1 & 2) shall not exceed 20 MWac output/export into the WAPA grid.

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32. Other N/A

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**Section V.**

33. Will the development extend onto or adjoin any beach tidelands, submerged lands or public trustlands?  
No.

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34. Will the development maintain, enhance or conflict with public access to the shoreline and along the coast?  
There is no known existing public access to the shoreline or along the coast, however; should any access become known prior to construction the development anticipates to maintain any such access.

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35. Will the development protect or provide moderate income housing opportunities?  
Will it displace moderate income housing?  
No residential development is being proposed therefore would protect all existing income housing opportunities.

---

36. How will the development affect traffic on the coastal access roads?  
The proposed project should have no adverse affect to traffic on the coastal access roads. No parking is proposed and any trips generated will be from infrequent maintenance vehicles that will park along side the proposed gravel roads.

---

 as Manager SFT Solar LLC.  
Signature of owner or authorized agent

\_\_\_\_\_  
Date

GOVERNMENT OF THE VIRGIN ISLANDS OF THE UNITED STATES DEPARTMENT OF  
PLANNING AND NATURAL RESOURCES DEVELOPMENT PERMIT APPLICATION

FORM L&WD-5  
PROOF OF LEGAL INTEREST

AFFIDAVIT

I, Christian Loranger of STF Solar, LLC (Subsidiary of Vlelectron, LLC) being duly sworn depose and say that:  
Applicant(s)\* (or John Doe of Entity Applicant)

1. Christian Loranger am/is the (check one)  
(I or Entity/Applicant)

☐ Record title owner (fee simple) ☐ Lessee ☐ Other (specify)

Of the real property described as Parcel No(s) 104901013400 and 104404046300

Estate Fortuna Quarter West End Island Saint Thomas

**\*Applicant(s) is required to provide documentation for legal interest stated above (e.g. deed, lease, etc.)**

2. I have the irrevocable approvals, permission, or power of attorney from all other persons with a legal interest in the property to undertake the work proposed in the permit application as more fully set forth in the exhibit (s) attached hereto:

\_\_\_\_\_  
Signature Date

\_\_\_\_\_  
Signature Date

\_\_\_\_\_  
Print

\_\_\_\_\_  
Print

The foregoing instrument was acknowledged before me this \_\_\_\_ day of \_\_\_\_\_

20 \_\_\_\_ by \_\_\_\_\_ at \_\_\_\_\_ county  
(Name or Name/Title of Entity)

of \_\_\_\_\_.

\_\_\_\_\_  
Notary Public

\_\_\_\_\_  
My Commission expires

**GOVERNMENT OF THE VIRGIN ISLANDS OF THE UNITED STATES  
DEPARTMENT OF PLANNING AND NATURAL RESOURCES  
DEVELOPMENT PERMIT APPLICATION**

**PUBLIC NOTICE  
(SUPPLEMENT TO FORM L&WD-6)**

Pursuant to Act 5270, as approved by the Governor of the Virgin Islands on July 30, 1987, amending Section 910 (a) (2) and 911 (d) (2) of the Coastal Zone Management Act (Title 12, VI Code, Chapter 21), all applicants for Coastal Zone Management permits are required to present “certification from Bureau of Internal Revenue and Department of Finance” indicating “that the applicant has filed and paid all taxes, penalties and interest, and from the Office of the Lieutenant Governor that the applicants has filled its required annual report or has satisfactorily made agreement to pay the taxes or fill the required reports “12 VIC 910 (a) (2) (C), and “ (2) A coastal zone permit that includes an occupancy or development lease shall only be granted for a particular parcel of filled land for a lease period of not more than 20 years; provided that nothing in this subsection shall prohibit a lessee or permittee from executing a new lease at the end of the 20 year period. Any lease executed at the end of the lease period shall meet the requirements of this Chapter and shall be approved by the Governor and ratified by the Legislature, or in the event the Legislature is not in session, by the Committee on Planning and Environmental Protection.

For applicants not required by law to submit an annual report or to satisfactorily make an agreement to pay taxes or file the required reports, a letter from the Bureau of Internal Revenue, and/or the Department of Finance, and/or the Lieutenant Governor’s office so indicating will be required to continue further processing of the application.

Accordingly, all Coastal Zone Management permit applications (both minor and major), which are not accompanied by the certificates, as required by Act 5290, or written notification from said agencies indicating waiver or exemption of these requirements will not be accepted by the permitting office, It is the responsibility of each applicant to demonstrate compliance with the provisions of this Act.

**GOVERNMENT OF  
THE VIRGIN ISLANDS OF THE UNITED STATES  
-0-  
VIRGIN ISLANDS BUREAU OF INTERNAL REVENUE**

**(DPNR FORM L&WD-6)  
APPLICATION FOR TAX FILING AND PAYMENT STATUS REPORT\*\***

Date: \_\_\_\_\_

The applicant identified below hereby requests a letter certifying his or her tax filing and payment status for the purpose of receiving a Coastal Zone Management Permit from the Virgin Islands Department of Planning and Natural Resources pursuant to Act 5270, amending Sections 910 (a)(2) and 911 (d)(2) of the Coastal Zone Management Act (Title 12, Chapter 21, Virgin Islands Code). The applicant authorizes the Bureau of Internal Revenue to disclose any taxpayer information necessary to process this application to the Virgin Islands Department of Planning and Natural Resources, who may make such further disclosures as are necessary to carry out the requirements of the Coastal Zone Management Act, as amended.

Name: Christian Loranger

Business Name: STF Solar, LLC (Subsidiary of Vlelectron, LLC)

EIN/TIN: 66-1110485

SSN: \_\_\_\_\_

Please Indicate:

☐ \*Corporation  
☐ \*Partnership  
☒ Individual  
☐ Other L.L.C.

Type of Business: Solar Development

Please circle forms that you use: 1120, 1120s, 1065, 1040, 941 VI, 722 VI, 720, 720 VI, 720 BVI, 50VI, other (list)

Date Business Started: 9/4/2025

Person Representing Applicant: \_\_\_\_\_ Position: \_\_\_\_\_

Signature: [Signature] as Manager STF

Mailing Address: 5000 ESTATE ENIGHED PMB 348 ST JOHN VI 00830

Date: 10/14/2025 Telephone Number: (508) 965-8637

Reply to: #1A Lockharts Garden, St. Thomas VI 00802 or 4008 Estate Diamond, St. Croix VI 00820

\* Partnerships and/or Corporations must list partners/ corporate officers, social security numbers and addresses on a separate sheet and attach it to this application.

**GOVERNMENT OF THE VIRGIN ISLANDS OF THE UNITED STATES  
DEPARTMENT OF PLANNING AND NATURAL RESOURCES  
DEVELOPMENT PERMIT APPLICATION**

**PUBLIC NOTICE  
(SUPPLEMENT TO FORM L&WD-6)**

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For applicants not required by law to submit an annual report or to satisfactorily make an agreement to pay taxes or file the required reports, a letter from the Bureau of Internal Revenue, and/or the Department of Finance, and/or the Lieutenant Governor’s office so indicating will be required to continue further processing of the application.

Accordingly, all Coastal Zone Management permit applications (both minor and major), which are not accompanied by the certificates, as required by Act 5290, or written notification from said agencies indicating waiver or exemption of these requirements will not be accepted by the permitting office, It is the responsibility of each applicant to demonstrate compliance with the provisions of this Act.

**GOVERNMENT OF  
THE VIRGIN ISLANDS OF THE UNITED STATES  
-0-  
VIRGIN ISLANDS BUREAU OF INTERNAL REVENUE**

**(DPNR FORM L&WD-6)  
APPLICATION FOR TAX FILING AND PAYMENT STATUS REPORT\*\***

Date: \_\_\_\_\_

The applicant identified below hereby requests a letter certifying his or her tax filing and payment status for the purpose of receiving a Coastal Zone Management Permit from the Virgin Islands Department of Planning and Natural Resources pursuant to Act 5270, amending Sections 910 (a)(2) and 911 (d)(2) of the Coastal Zone Management Act (Title 12, Chapter 21, Virgin Islands Code). The applicant authorizes the Bureau of Internal Revenue to disclose any taxpayer information necessary to process this application to the Virgin Islands Department of Planning and Natural Resources, who may make such further disclosures as are necessary to carry out the requirements of the Coastal Zone Management Act, as amended.

Name: Christian Loranger

Business Name: STF 2 Solar, LLC (Subsidiary of Vlelectron, LLC)

EIN/TIN: \_\_\_\_\_

SSN: \_\_\_\_\_

Please Indicate:

☐ \*Corporation  
☐ \*Partnership  
☐ Individual  
☐ Other

Type of Business: \_\_\_\_\_

Please circle forms that you use: 1120, 1120s,  
1065, 1040, 941 VI, 722 VI, 720, 720 VI, 720  
BVI, 50VI, other (list)

Date Business Started: \_\_\_\_\_

Person Representing Applicant: \_\_\_\_\_ Position: \_\_\_\_\_

Signature: \_\_\_\_\_

Mailing Address: \_\_\_\_\_

Date: \_\_\_\_\_ Telephone Number: \_\_\_\_\_

Reply to: #1A Lockharts Garden, St. Thomas VI 00802 **or** 4008 Estate Diamond, St. Croix VI 00820

\* Partnerships and/or Corporations must list partners/ corporate officers, social security numbers and addresses on a separate sheet and attach it to this application.

GOVERNMENT OF THE VIRGIN ISLANDS OF THE UNITED STATES  
DEPARTMENT OF PLANNING AND NATURAL RESOURCES  
DEVELOPMENT PERMIT APPLICATION

FORM L&WD-7  
CORPORATION/ASSOCIATION APPLICATION  
(To be used when a corporation or association is making a Permit Application in Tier I)

STF Solar, LLC

(Corporation or Association Name)

By:  as Manager STF Solar LLC

(Signature)

President or Vice-President or equivalent

Ph 1 Owner / Developer / Operator

Title/Position (Print)

Christian Loranger

Print

WITNESS:



ATTEST:

Secretary (or equivalent)

Signature

Secretary (or equivalent)

Print

Seal

On this \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, before me the undersigned officer, personally appeared \_\_\_\_\_  
\_\_\_\_\_, who acknowledges himself to be the \_\_\_\_\_  
of \_\_\_\_\_; that he executed the foregoing instrument in the capacity above and has the  
authority to execute this application on behalf of the company.

IN WITNESS WHEREOF, I have hereunto set my hand and official seal the day and year above written.

**Include Supporting Documents:**

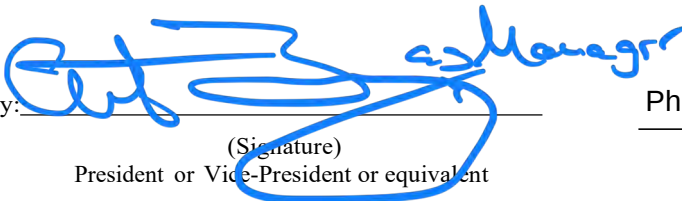
1. Compliance with Act No. 5270 by providing:
  - (a) Tax clearance letter from the Bureau of Internal Revenue
  - (b) Property tax clearance letter from the Lieutenant Governor's Office.
  - (c) Corporations and Associations: Certificate of Good Standing or equivalent, organizational documents & Amendments (Articles, Bylaws, Operating Agreement, Declarations)
  - (d) Corporate Resolution (or equivalent) authorizing action on behalf of the company.

GOVERNMENT OF THE VIRGIN ISLANDS OF THE UNITED STATES  
DEPARTMENT OF PLANNING AND NATURAL RESOURCES  
DEVELOPMENT PERMIT APPLICATION

FORM L&WD-7  
CORPORATION/ASSOCIATION APPLICATION  
(To be used when a corporation or association is making a Permit Application in Tier I)

STF 2 Solar, LLC

(Corporation or Association Name)

By:  (Signature)  
President or Vice-President or equivalent

Ph 2 Owner / Developer / Operator

Title/Position (Print)

Christian Loranger

Print

WITNESS 

ATTEST: \_\_\_\_\_  
Secretary (or equivalent) Signature

\_\_\_\_\_  
Secretary (or equivalent) Print

Seal

On this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, before me the undersigned officer, personally appeared \_\_\_\_\_  
\_\_\_\_\_, who acknowledges himself to be the \_\_\_\_\_  
of \_\_\_\_\_; that he executed the foregoing instrument in the capacity above and has the  
authority to execute this application on behalf of the company.

IN WITNESS WHEREOF, I have hereunto set my hand and official seal the day and year above written.

**Include Supporting Documents:**

1. Compliance with Act No. 5270 by providing:
  - (a) Tax clearance letter from the Bureau of Internal Revenue
  - (b) Property tax clearance letter from the Lieutenant Governor's Office.
  - (c) Corporations and Associations: Certificate of Good Standing or equivalent, organizational documents & Amendments (Articles, Bylaws, Operating Agreement, Declarations)
  - (d) Corporate Resolution (or equivalent) authorizing action on behalf of the company.

## Flood Plain Determination and Permit Application

*To be completed by all applicants*

1. Owner: Seaview, Inc. - Lindberg Bay (3B) / William Dowling Jr. (Trustee) (2)  
 Mailing Address 61 Broadway New York, NY 10006  
 Home Tel. #: N/A Business Tel. #: N/A Cellular #: N/A
2. Designer: Hoyle Tanner & Associates, Inc.  
 Lic. #: \_\_\_\_\_ Tel. #: \_\_\_\_\_ Cellular #: \_\_\_\_\_
3. Plot #: 104901013400 / 104404046 Estate: Fortuna Quarter: West End  
 Flood Zone Designation: "X" and "VE"

If your flood zone designation is Zone A, AE, AO, A1-30, A99, V, VO, Vc or V1-V30 as shown on the NFIP FIRM Map, then complete this section.

\*\*\*\*\* NFIP Flood Zone Designation \*\*\*\*\*

1. Type of development:

1 or 2 Family dwelling ☐ Mobile Home ☐ Non-Structural ☒  
 3 Family or more, Apartment or Condo Structure ☐ Non-Residential Structure: ☐  
 Commercial Structure ☐ New Construction ☐ Non-Structural ☐  
 Addition to Structure ( ) 50% Substantial Improvement of Existing Structure ☐

Description of Activity This project is a proposed Solar Energy Facility with battery storage intended to be designed so that the limits of construction are outside  
of the 100-year "VE" flood zone.

2. Base Flood Elevation at the Development Site is 25 ft. above mean sea level (msl).
3. Elevation of the First Floor, Basement or Flood proof level for proposed structure is N/A ft.
4. Describe the Non-Structural Activity i.e. septic tank, waste water treatment plants etc. (including the location and development): The proposed Solar Energy Facility intends to work within the existing grades on-site and will be constructed with rows of racks and panels that  
are nearly entirely previous limiting any adverse effects on existing runoff and erosion into the coast.
5. Attach a certified copy of site plan ( 8.5" x 11" ) showing Base Flood Elevation . See sample attached.

## FOR OFFICE USE ONLY

Is the property located in an identified Flood Hazard Area? ( ) YES ( ) NO

NFIP Zone Designation: \_\_\_\_\_ Forward to Flood Plain Manager : ( ) YES ( ) NO

Application : APPROVED ( ) DENIED ( ) RESUBMIT ( )

Plan Reviewer Name: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

SITE PLAN

SCALE: ONE INCH EQUALS 50 FT.

SPHA or 100-Year Flood plain

IN 100 YEAR FLOOD BOUNDARY

NOTES: ALL BASEMENTS WILL BE CONSTRUCTED OF CINDER BLOCK AND WILL BE LEFT UNFINISHED. FOR STRUCTURES LOCATED ON LOTS #1 AND #2, UTILITIES WILL BE SITUATED ON FIRST FLOORS.

BFE- Base (Or 100 Year) Flood Elevation  
(Tied Into Elevation 6.0 NGVD)

Shore  
Line

BASEMENT FLOOR EL  
4 FT. BELOW GROUND LEVEL

Existing  
House

LOT #1

PROPOSED  
HOUSE

LOT #2

BFE - EL. 6

BASEMENT FLOOR EL  
4 FT. BELOW GROUND LEVEL

BASEMENT FLOOR EL  
4 FT. BELOW GROUND LEVEL

Undeveloped  
Lot

LOT #3

Estate Road

Private Road

N

## Approved Permit Letter Request for Partial Clearing



Christian Loranger  
CB Loranger Companies  
5000 Estate Enighed, Suite 4a, PMB348  
St. John, USVI 00830  
Web: [www.cbloranger.com](http://www.cbloranger.com)

October 13, 2023

via email to [jp.oriol@dpnr.vi.gov](mailto:jp.oriol@dpnr.vi.gov)

The Honorable Jean-Pierre L. Oriol, Commissioner  
Department of Planning and Natural Resources  
4611 Tutu Mall Park  
Suite 300, Second Floor  
St. Thomas, VI 00802

**RE: Rem. 2,3-B Fortuna Solar Energy Facility Permit Letter Request**

Dear Commissioner Oriol:

VIElectron, LLC (VIElectron) has signed a Power Purchase Agreement (PPA) with the Virgin Islands Water and Power Authority (VIWAPA) to construct several Solar Energy Facilities in the U.S. Virgin Islands.

One of these facilities is planned for the south-western end of St. Thomas at No. 2 & 3B Estate Fortuna, West End Quarter. Both parcels of land cover a combined area of about 200 acres with sections located in both Tier I and Tier II.

As a result of feedback received during a DPNR CZM Pre-Application Meeting held on October 5<sup>th</sup>, 2023, VIElectron recognizes that there may be some significant challenges and hurdles to overcome securing a Major CZM Permit for the Fortuna Site based on its original concept plan. Consequently, the project has been significantly reduced and revised to limit use of the property to only the areas located inland ( Tier II). This will negate the need to apply for a Major Land CZM Permit and require instead a Major Earth Change Permit Application submission. The original conceptual design was to generate about 40 MWdc on an area covering approximately 125 acres. The new conceptual design will reduce power generation to about 20 MWdc utilizing about 50 acres of land.

For this project, the intention is to work within the existing grades and outside the limits of any flood zones that may exist on the site to minimize the impacts on the existing properties while installing the solar panel modules, and any associated infrastructure.

VIElectron would like to proceed with some critical, preliminary work on the Fortuna Site to include installing fencing around the perimeter of the project area; conducting a Phase I Archeological Study, as well as Topographic and Boundary Surveys. With this objective in mind, VIElectron kindly seeks your approval to allow a partial clearing of the Site using

## VIELECTRON ST. Thomas. Solar Farms Permit Request

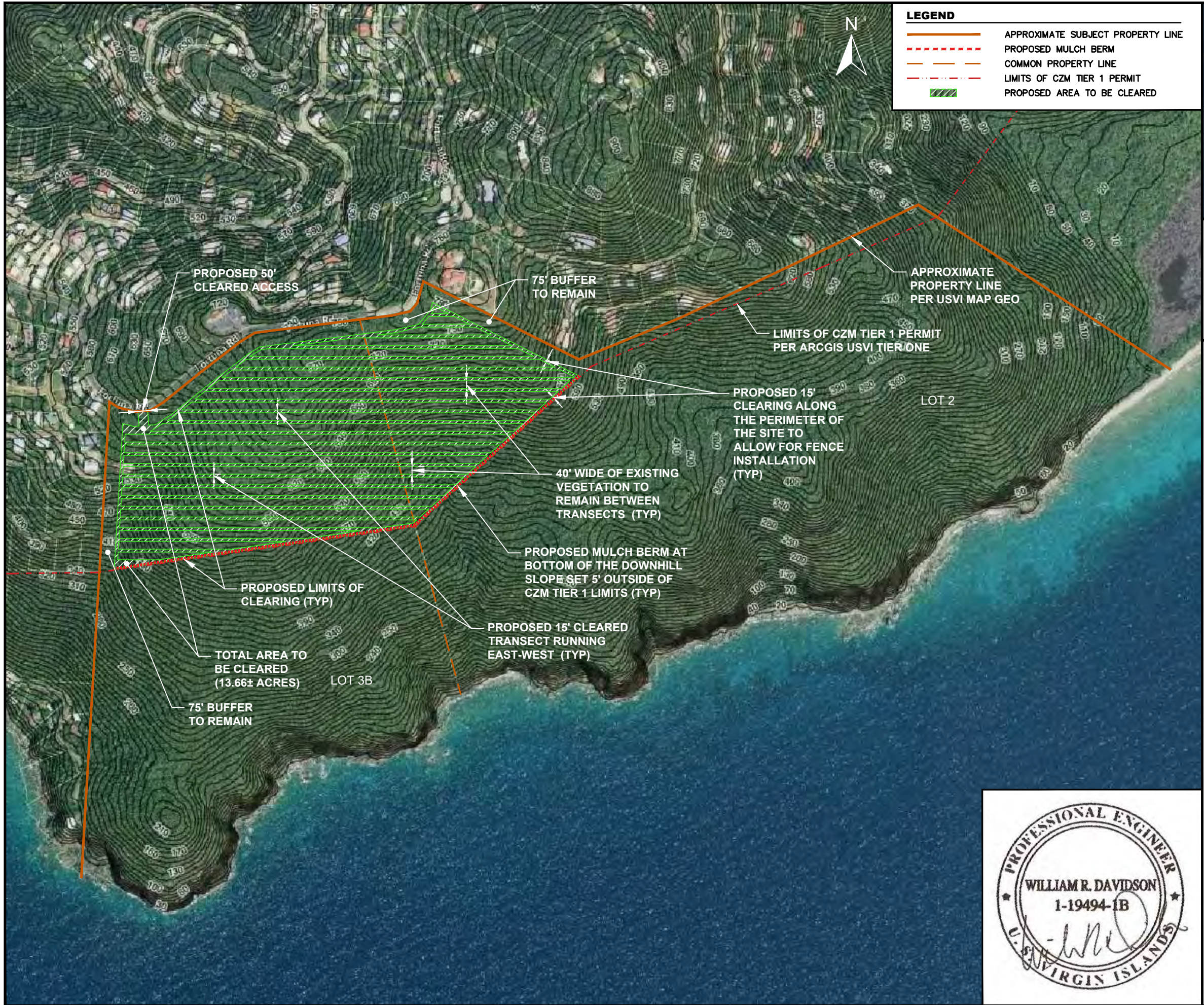
transects as per the attached plan shown below. The plan depicts clearing a 15' swath around the perimeter of the projects for fencing and 15' wide transects in an east-west direction through the site for proper site investigation. 40' of vegetation is left between the transects.

Thank you for your careful consideration of this request. Your approval and support of this matter will be greatly appreciated and will have a significant impact to the timeline of these projects which are critical to the significant improvement to the electrical power reliability on St. Thomas.

If you have any questions or concerns, please contact me at (508) 985 5637.

Sincerely,  
VIElectron LLC

Christian B. Loranger  
Manager



## SITE CLEARING PLAN FORTUNA 3B & 2 WEST END QTR ESTATE FORTUNA SAINT THOMAS, VI

LOT AREA: (3B) 84± ACRES  
(2) 120± ACRES

CLEARING AREA: 13.66± ACRES

### CLEARING NOTES:

1. A REGISTERED LAND SURVEYOR SHALL CLEARLY MARK THE PROPERTY LINES, CZM TIER 1 LIMITS, OUTER LIMITS OF CLEARING AND CENTERLINE OF EACH TRANSECT PRIOR TO THE START OF ANY WORK.
2. TRANSECTS MAY BE FIELD ADJUSTED AROUND OBSTACLES SUCH AS LARGE ROCKS.
3. ALL CLEARING SHALL BE COMPLETED WITH A LOW GROUND PRESSURE SKID STEER OR TRACK EXCAVATOR WITH A MULCHING ATTACHMENT TO REMOVE AND GRIND THE TREES AND VEGETATION WITHIN 2 INCHES OF THE EXISTING GROUND SURFACE. ALL ROOTS AND STUMPS SHALL REMAIN IN PLACE WITH NO SOIL DISTURBANCES. EXCESS MULCH SHALL BE PLACED IN A BERM AT THE BOTTOM OF THE DOWNHILL SLOPES AS SHOWN FOR EROSION CONTROL.
4. NO CLEARING OR DISTURBANCES SHALL OCCUR WITHIN THE CZM TIER 1 LIMITS.

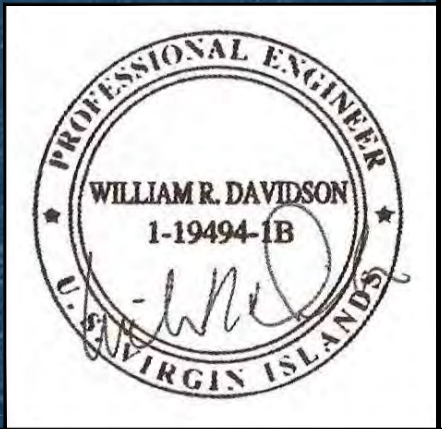
SCALE: 1" = 500'

OCTOBER 9, 2023

PREPARED FOR:

**Vlelectron, LLC**

PREPARED BY:



# Environmental Assessment Report (EAR) Narrative

## SECTION 1.00 – APPLICANT INFORMATION

Applicant (Phase 1)

STF Solar, LLC

c/o Christian Loranger

5000 Est Enighed, STE 4A, PMB 146

Saint John, VI 00830

(508) 965-8637

## SECTION 2.00 – LOCATION OF PROJECT

The overall proposed solar energy facility (“the project”) is located in Tier II (inland) with portions of the site located in Tier I (coastal zone), near the western section of United States Virgin Island St. Thomas, south of Fortuna Road, on two parcels identified as No. 3B and 2 Fortuna (Parcel No. 104901013400 and 104404046300, respectively). Phase 1 of the project is located entirely in Tier II, where phase 2 of the project is anticipated to be constructed within Tier I of the Coastal Zone Management (CZM) line and concurrently with phase 1.

## SECTION 3.00 – ABSTRACT

The existing site, previously used for agricultural use, is vacant and primarily consists of overgrown woods, grass and mixed growth vegetation where stormwater flows downhill in the southern direction of the site towards the coast. The 100-year flood zone “VE” is present and runs along the coastline; however, the proposed project is entirely within zone “X” and does not anticipate affecting any flooding on-site due to the hydrological outfall is the ocean. Please refer to the Existing Conditions Plan as part of **Attachment H** and FEMA Firm Map as part of **Attachment I**.

Based on a recently performed Flora and Fauna Study (included as **Attachment D**), there are no known endangered habitats on-site that would be impacted by the proposed project.

Based on a recently performed Marine Study (included as **Attachment E**), there are no known marine life that would be impacted by the proposed project.

Based on a Glint & Glare Study (included as **Attachment F**), the solar system running along the east-west axis produces glare for incoming airfield traffic therefore, the entire system was rotated to 195-degrees along this axis to prevent any visual impairment for pilots.

A Cultural Resource Survey will be performed to determine if any historical features on-site will be impacted by the proposed project once the site is cleared enough for site investigation.

## SECTION 4.00 – STATEMENT OF OBJECTIVES

The proposed project intends to work within the existing grades and outside the limits of the flood zone to minimize the impacts on the surrounding land while installing the solar panel modules, and any associated infrastructure, to connect to the Water and Power Authority (WAPA).

The system itself is designed to provide power directly to the local grid throughout the day, while also charging eight (8) on-site battery energy storage systems (BESS), where five (5) are anticipated to be installed in Phase 1 and three (3) in Phase 2.

## SECTION 5.00 – DESCRIPTION OF PROJECT

### 5.01 – Summary of Proposed Activities

The proposed activities for the installation of the project includes; an initial survey and staking the limits of all work, constructing the stabilized construction entrance, installing silt fences and other various perimeter erosion control measures prior to any site clearing and grubbing. On December 1, 2023, a Permit Letter Request was approved allowing for partial clearing of the site for 15' wide perimeter around the project area for fence installation and 15' wide transects in the east-west direction for proper site investigation at 40' intervals between each transect. Currently the site has been cleared according to the approved letter (included as part of this application) and appropriate erosion control measures are already in place.

Once additional permits are obtained, the remaining activities for installation will include; the installation of the security fence, construction of the 20' wide gravel access roads, construction of any stormwater rock berms and other best management practices, installation of the solar racking screws, construction of the solar racking system and installation of the solar panels, then the installation of all conduit runs and electrical equipment. The project area should be seeded in any disturbed areas that appear bare after construction.

### 5.02 – Purpose of Project

The proposed project intends to generate clean energy for WAPA and ultimately to the residences of the Virgin Islands. The batteries systems will provide power to the grid during nighttime hours or cloudy days with lower solar field output for a more consistent power supply.

### 5.03 – Presence and Location of Any Critical Area(s)

During the current clearing construction activities granted from the approved Permit Letter Request, it has been made evident two (2) ghuts exist on-site. Although the ridges of the ghuts are visually well defined for the working crews, the ghuts are currently being surveyed on an accelerated schedule to obtain an updated terrestrial survey to provide a 25-foot buffer on each side of the ghut. No construction will occur within the buffers.

The site, particularly in the northern region, contains steep slopes and several drop-offs.

There are no wetlands present on-site.

#### 5.04 – Proposed Method of Construction

The clearing and grubbing for the site has been, and will continue to be, completed with a low ground pressure skid steer or track excavator with a mulching attachment to remove and grind the trees and vegetation within 2-inches of the existing ground surface to preserve all topsoil and allow existing roots to remain. The majority of the mulch is left in place, while any excess mulch is placed in a perimeter berm along the downhill slopes toward the coast.

The proposed racking system is supported on 2.375-inch diameter ground screws that are installed into the ground setting the lower end of the panels approximately 24-inches above ground. The proposed technology utilizes First Solar Series-6 465W solar panel modules set at a 20-degree tilt. Each panel is placed within a galvanized ground mounted racking system, custom made specifically for the USVI to withstand 180 mph wind speeds, installed in rows running in the east-west direction rotated 195-degrees (southwest facing), where each row is spaced to provide five (5) feet of clearance between adjacent solar panels. At the end of each row, all power lines used to operate the solar panels will be distributed above ground to connect to the equipment pads where the low-voltage wires will run through a Class 2 Circuit (CAV) system and the high-voltage wires will run through conduits on concrete pads.

For installation of the solar panels and associated racking system within the steep slopes of the site, cut ins and steps may need to be constructed for access.

No proposed water, sewer, lighting or stormwater infrastructure (i.e. inlets, manholes, etc.) as part of this project.

#### 5.05 – Provisions to Limit Site Disturbance

The on-going clearing and mulching of the site, cutting all trees and vegetation within 2-inches of the existing ground, allows all roots and stumps to remain in place creating no soil disturbance and preserving all topsoil and maintaining ground stabilization.

No potable water, sewer or stormwater infrastructure (i.e. inlets, manholes, infiltration basins) are proposed therefore no excavation is required.

All electrical runs, both low- and high-voltage, will be distributed above ground on concrete pads eliminating the need for excavation therefore minimizing any earth disturbance.

Cut ins and steps along the steep slopes will be constructed only on an as needed basis to install the solar system to reduce the overall ground disturbance of the site.

#### 5.06 – Erosion and Sedimentation Controls

The project proposes erosion and sedimentation controls to ensure the site's disturbance material is contained on-site that includes, but are not limited to, site fencing, mulch-in-place and perimeter berms, temporary and permanent rock berms, and natural spray tack adhesives for necessary stepping access paths, as needed, for installation requirements on steep slopes.

### 5.07 – Construction Activities and Erosion Control Implementation Methods

The current construction activities of partially clearing the site have implemented erosion control methods including mulch-in-place, mulch berms, and silt fencing. These methods have proven to be very effective construction means and methods on site and will continue to be used throughout the duration of construction for the project.

Construction and installation of the ground screws and racking system within the steep slopes on-site will have additional erosion control methods implemented where cut ins and steps may be required. Silt fencing and natural spray tack adhesives should be used, as needed, for sections of the cuts and/or steps that appear to fail on-site during construction activities. Temporary rock berms may be necessary in areas that form stormwater flow paths due to construction activities, especially during heavy rains. Permanent rock berms will be installed within the project area at locations that demonstrate forming flow paths to prevent future stormwater erosion. Please refer to the Hydrology Report as part of **Attachment J**.

### 5.08 – Maintenance of Erosion and Sediment Control Measures

The contractor will be responsible for implementing all erosion and sediment control devices needed to stabilize the project area during construction with both temporary and permanent measures to prevent excess runoff, due to construction, to the on-site ghuts and/or off-site to the coast. All temporary stabilization measures will be removed after the site has been stabilized and/or construction is complete. Erosion control measures are to be inspected weekly and after every heavy rainfalls within 24 hours.

### 5.09 – Method of Sewage Disposal

The proposed project does not include any residential or office spaces producing sewage waste and therefore methods of disposal is not applicable.

### 5.10 – Drawings and Plans

Please refer to Construction Plans as part of **Attachment H**.

### 5.11 – Proposed New Development Work Plan

Please refer to Construction Plans as part of **Attachment H**.

Attachment A – Lease Agreement / STF Solar, LLC –  
Subsidiary of Vlelectron, LLC Documentation



## Attachment B – Property Tax Clearance Letter



## Attachment C – NOI and Construction SWPPP



## Stormwater Pollution Prevention Plan (SWPPP)

For Construction Activities At:

Proposed Solar Energy Facility with Battery Storage  
Parcel No. Fortuna 2&3B of Estate Fortuna,  
West End Quarter, St. Thomas, VI 00802

SWPPP Prepared For:

STF Solar, LLC  
Subsidiary of VIELECTRON, LLC  
c/o Christian Loranger  
5000 Est. Enighed, Ste 4a PMB 146, St. John, U.S.V.I. 00830  
Phone: 508-965-8637  
nbd solar@gmail.com

SWPPP Prepared By:

Hoyle, Tanner & Associates, Inc.  
95 E. Mitchell Hammock Road, Suite 200  
Oviedo, FL 32765  
603-431-2520

SWPPP Preparation Date:

10/15/2025

Estimated Project Dates:

11/01/2025 – 7/01/2026

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Stormwater Pollution Prevention Plan (SWPPP)  
Proposed Solar Energy Facility with Battery Storage – Fortuna

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SECTION 1: CONTACT INFORMATION/RESPONSIBLE PARTIES

1.1 *Operator(s) / Subcontractor(s)*

Operator(s):

STF Solar, LLC  
Subsidiary of VIELECTRON, LLC  
Christian Loranger  
5000 Est. Enighed, Ste 4a PMB 146 St. John, U.S.V.I 00830  
Phone 508-965-8637  
nbd solar@gmail.com  
Area of Control: Entire Site

Emergency 24-Hour Contact:

VIELECTRON, LLC  
Christian Loranger  
Phone 508-965-8637

Stormwater Pollution Prevention Plan (SWPPP)  
Proposed Solar Energy Facility with Battery Storage – Fortuna

1.2 Stormwater Team

| Stormwater Team                                                                          |                                                       |                                                             |                                                                |
|------------------------------------------------------------------------------------------|-------------------------------------------------------|-------------------------------------------------------------|----------------------------------------------------------------|
| Name and/or Position, and Contact                                                        | Responsibilities                                      | I Have Completed Training Required by VI CGP Part 6         | I Have Read the CGP and Understand the Applicable Requirements |
| Christian Loranger<br>STF SOLAR, LLC<br>Owner<br>508-965-8637<br>nbd solar@gmail.com     | Developer                                             | <input type="checkbox"/> Yes<br><input type="checkbox"/> No | <input type="checkbox"/> Yes<br>Date:                          |
| Christian Loranger<br>VIELECTRON, LLC<br>Operator<br>508-965-8637<br>nbd solar@gmail.com | Operator;<br>Inspections of<br>stormwater<br>controls | <input type="checkbox"/> Yes<br><input type="checkbox"/> No | <input type="checkbox"/> Yes<br>Date:                          |
| Hoyle Tanner & Associates<br>Engineer<br>603-431-2520                                    | SWPPP<br>Development                                  | <input type="checkbox"/> Yes<br><input type="checkbox"/> No | <input type="checkbox"/> Yes<br>Date:                          |

Stormwater Pollution Prevention Plan (SWPPP)  
Proposed Solar Energy Facility with Battery Storage – Fortuna

Stormwater Team Members Who Conduct Inspections Pursuant to CGP Part 4

| Name and/or Position and Contact                                                                                    | Training(s) Received                              | Date Training(s) Completed                        | If Training is a Non-EPA Training, confirm that it Satisfies the Minimum Elements of VI CGP Part 6                                                                                                                                                                                                                                                                                                                                                                                  |
|---------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|---------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Christian Loranger<br>STF Solar, LLC<br>Subsidiary of VIELECTRON<br>Operator<br>508-965-8637<br>nbd solar@gmail.com | <a href="#">Insert Title of Training Received</a> | Date: <a href="#">Click here to enter a date.</a> | <input type="checkbox"/> Principles and practices of erosion and sediment control and pollution prevention practices at construction sites<br><input type="checkbox"/> Proper installation and maintenance of erosion and sediment controls and pollution prevention practices used at construction sites<br><input type="checkbox"/> Performance of inspections, including the proper completion of required reports and documentation, consistent with the requirements of Part 4 |

See Appendix I for required Training Documentation.

Stormwater Pollution Prevention Plan (SWPPP)  
Proposed Solar Energy Facility with Battery Storage – Fortuna

SECTION 2: SITE EVALUATION, ASSESSMENT, AND PLANNING

2.1 *Project/Site Information*

Project Name and Address

Proposed Solar Energy Facility with Battery Storage - Fortuna

Parcel No. Fortuna 2&3B of Estate Fortuna,  
West End Quarter, St. Thomas, VI 00802

Project Latitude/Longitude

Latitude: 18.3478° N  
(decimal degrees)

Longitude: - 65.0086 ° W  
(decimal degrees)

Latitude/longitude data source: ☐ Map ☐ GPS ☒ Other (please specify): Google Earth

Horizontal Reference Datum: ☐ NAD 27 ☐ NAD 83 ☒ WGS 84

Additional Site Information

Is your site located on Indian country lands, or on a property of religious or cultural significance to an Indian Tribe? ☐ Yes ☒ No

2.2 *Discharge Information*

Does your project/site discharge stormwater into a Municipal Separate Storm Sewer System (MS4)? ☐ Yes ☒ No

Are there any waters of the U.S. within 50 feet of your project's earth disturbances? ☐ Yes ☒ No

Stormwater Pollution Prevention Plan (SWPPP)  
Proposed Solar Energy Facility with Battery Storage – Fortuna

For each point of discharge, provide a point of discharge ID (a unique 3-digit ID, e.g., 001, 002), the name of the first receiving water that receives stormwater directly from the point of discharge and/or from the MS4 that the point of discharge discharges to, and the following receiving water information, if applicable:

| Point of Discharge ID | Name of receiving water that receives stormwater discharge: | Is the receiving water impaired (on the CWA 303(d) list)?           | If yes, list the pollutants that are causing the impairment: | Has a TMDL been completed for this receiving waterbody?             | If yes, list TMDL Name and ID: | Pollutant(s) for which there is a TMDL: | Is this receiving water designated as a Tier 2, Tier 2.5, or Tier 3 water? | If yes, specify which Tier (2, 2.5, or 3)? |
|-----------------------|-------------------------------------------------------------|---------------------------------------------------------------------|--------------------------------------------------------------|---------------------------------------------------------------------|--------------------------------|-----------------------------------------|----------------------------------------------------------------------------|--------------------------------------------|
| 001                   | Unidentified Water – 800041871                              | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |                                                              | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |                                |                                         | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No        |                                            |

### 2.3 Nature of the Construction Activities

#### General Description of Project

Installation of a solar farm at Fortuna 2&3B, West End Quarter, St. Thomas, U.S. Virgin Islands. The parcel is roughly 204 acres and undeveloped. Approximately 44 acres (within tier II) will be used for the installation of Phase 1 of the proposed solar farm designed to generate approximately 20 MW of power; the remaining project area is within tier I for the installation of Phase 2 of the proposed solar farm designed to generate approximately 24 MW of power. Both phases are anticipated to be constructed concurrently. The site is currently being cleared where mulched vegetation is being mulched-in-place. The project consists of the installation of ground screws for the solar racking units where panels will be held. Installation of electrical equipment and conduits will be installed in concrete pads above ground, and access to the site will be through a gravel access drive. No grading is proposed on-site.

Business days and hours for the project: 6am-7pm Daily

#### Size of Construction Site

|                                                                                                                  |               |
|------------------------------------------------------------------------------------------------------------------|---------------|
| Size of Property                                                                                                 | 204 +/- Acres |
| Total Area Expected to be Disturbed by Construction Activities                                                   | 150 +/- Acres |
| Maximum Area Expected to be Disturbed at Any One Time, Including On-site and Off-site Construction Support Areas | 150 +/- Acres |

Type of Construction Site (*check all that apply*):

- ☐ Single-Family Residential   ☐ Multi-Family Residential   ☐ Commercial   ☐ Industrial  
☐ Institutional   ☐ Highway or Road   ☐ Utility   ☒ Other Solar Energy Facility

Will you be discharging dewatering water from your site?      ☐ Yes    ☒ No

If yes, will you be discharging dewatering water from a current or former Federal or State remediation site?      ☐ Yes    ☒ No

#### Pollutant-Generating Activities

List and describe all pollutant-generating activities and indicate for each activity the associated pollutants or pollutant constituents that could be discharged in stormwater from your construction site. Take into account where potential spills and leaks could occur that contribute pollutants to stormwater discharges, and any known hazardous or toxic substances, such as PCBs and asbestos, that will be disturbed during construction.

Stormwater Pollution Prevention Plan (SWPPP)  
Proposed Solar Energy Facility with Battery Storage – Fortuna

| Pollutant-Generating Activity<br>(e.g., paving operations; concrete, paint, and stucco washout and waste disposal; solid waste storage and disposal; and dewatering operations) | Pollutants or Pollutant Constituents<br>(e.g., sediment, fertilizers, pesticides, paints, caulks, sealants, fluorescent light ballasts, contaminated substrates, solvents, fuels) |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Demolition/Clearing                                                                                                                                                             | Sediment, debris                                                                                                                                                                  |
| Use of heavy equipment                                                                                                                                                          | Oil and grease                                                                                                                                                                    |
| Landscaping activities                                                                                                                                                          | Fertilizers, Nutrients                                                                                                                                                            |
| Natural spray tack adhesive (Erosion Control)                                                                                                                                   | Sealants, Solvents                                                                                                                                                                |

## 2.4 Sequence and Estimated Dates of Construction Activities

### Phase I

|                                                                                                            |           |
|------------------------------------------------------------------------------------------------------------|-----------|
| Phase 1                                                                                                    |           |
| Estimated Start Date of Construction Activities for this Phase                                             | 11/1/2025 |
| Estimated End Date of Construction Activities for this Phase                                               | 7/1/2026  |
| Estimated Date(s) of Application of Stabilization Measures for Areas of the Site Required to be Stabilized | 12/1/2025 |
| Estimated Date(s) when Stormwater Controls will be Removed                                                 | 7/1/2026  |

## 2.5 Authorized Non-Stormwater Discharges

List of Authorized Non-Stormwater Discharges Present at the Site

| Authorized Non-Stormwater Discharge                                                                                | Will or May Occur at Your Site?                                     |
|--------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|
| Discharges from emergency fire-fighting activities                                                                 | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| Fire hydrant flushings                                                                                             | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| Landscape irrigation                                                                                               | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| Water used to wash vehicles and equipment                                                                          | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| Water used to control dust                                                                                         | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| Potable water including uncontaminated water line flushings                                                        | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| External building washdown (soaps/solvents are not used and external surfaces do not contain hazardous substances) | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| Pavement wash waters                                                                                               | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| Uncontaminated air conditioning or compressor condensate                                                           | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |

Stormwater Pollution Prevention Plan (SWPPP)  
Proposed Solar Energy Facility with Battery Storage – Fortuna

| Authorized Non-Stormwater Discharge                                   | Will or May Occur at Your Site?                                     |
|-----------------------------------------------------------------------|---------------------------------------------------------------------|
| Uncontaminated, non-turbid discharges of ground water or spring water | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| Foundation or footing drains                                          | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| Uncontaminated construction dewatering water                          | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |

## 2.6 Site Maps

See Appendix A of this SWPPP for Site Map

## SECTION 3: DOCUMENTATION OF COMPLIANCE WITH OTHER FEDERAL REQUIREMENTS

### 3.1 Endangered Species Protection

#### Eligibility Criterion

Following the process outlined in Appendix C of the VI CGP, under which criterion are you eligible for coverage under this permit?

- 
- ☒ Criterion A: No ESA-listed species and/or designated critical habitat present in action area. Using the process outlined in Appendix C of the VI CGP, you certify that ESA-listed species and designated critical habitat(s) under the jurisdiction of the USFWS or NMFS are not likely to occur in your site's "action area" as defined in Appendix A of the VI CGP. *Please Note: NMFS' jurisdiction includes ESA-listed marine and estuarine species that spawn in inland rivers.*
- ☐ Check to confirm you have provided documentation in your SWPPP as required by VI CGP Appendix C (Note: reliance on State resources is not acceptable; see VI CGP Appendix C).

Documentation: The Flora & Fauna Study and Marine Study prepared by Amber Packard, MSc from the University of Virgin Islands (UVI) Marine Science Center concluded that no threatened or endangered species were observed within the development area. A copy of each study is included in this Coastal Zone Management Permit Application.

Eligibility Criterion

Following the process outlined in Appendix C of the VI CGP, under which criterion are you eligible for coverage under this permit?

---

- ☐ Criterion B: Eligibility requirements met by another operator under the 2012 VI CGP. The construction site's discharges and discharge-related activities were already addressed in another operator's valid certification of eligibility for your "action area" under eligibility Criterion A, C, D, E, or F of the 2012 VI CGP and you have confirmed that no additional ESA-listed species and/or designated critical habitat under the jurisdiction of USFWS and/or NMFS not considered in the that certification may be present or located in the "action area." To certify your eligibility under this criterion, there must be no lapse of TPDES permit coverage in the other VI CGP operator's certification. By certifying eligibility under this criterion, you agree to comply with any conditions upon which the other VI CGP operator's certification was based. You must include in your NOI the TPDES ID from the other 2012 VI CGP operator's notification of authorization under this permit and list any measures that you must comply with. If your certification is based on another 2012 VI CGP operator's certification under criterion C, you must provide EPA with the relevant supporting information required of existing dischargers in Criterion C.
- ☐ Check to confirm you have provided documentation in your SWPPP as required by VI CGP Appendix C.

---

Documentation: Insert Text Here

- ☐ Criterion C: Discharges not likely to result in any short- or long-term adverse effects to ESA-listed species and/or designated critical habitat. ESA-listed species and/or designated critical habitat(s) under the jurisdiction of the USFWS and/or NMFS are likely to occur in or near your site's "action area," and you certify to EPA that your site's discharges and discharge-related activities are not likely to result in any short- or long-term adverse effects to ESA-listed threatened or endangered species and/or designated critical habitat. This certification may include consideration of any stormwater controls and/or management practices you will adopt to ensure that your discharges and discharge-related activities are not likely to result in any short- or long-term adverse effects to ESA-listed species and/or designated critical habitat. To certify your eligibility under this criterion, indicate 1) the ESA-listed species and/or designated habitat located in your "action area" using the process outlined in Appendix C of this permit; 2) the distance between the site and the listed species and/or designated critical habitat in the action area (in miles); and 3) a rationale describing specifically how short- or long-term adverse effects to ESA-listed species will be avoided from the discharges and discharge-related activities. (Note: You must include a copy of your site map from your SWPPP showing the upland and in-water extent of your "action area" with your NOI.)
- ☐ Check to confirm you have provided documentation in your SWPPP as required by VI CGP Appendix C.

---

Documentation: Insert Text Here

Eligibility Criterion

Following the process outlined in Appendix C of the VI CGP, under which criterion are you eligible for coverage under this permit?

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- ☐ Criterion D: Coordination with USFWS and/or NMFS has successfully concluded.  
Coordination between you and the USFWS and/or NMFS has concluded. The coordination must have addressed the effects of your site's discharges and discharge-related activities on ESA-listed species and/or designated critical habitat under the jurisdiction of USFWS and/or NMFS, and resulted in a written confirmation from USFWS and/or NMFS that the effects of your site's discharges and discharge-related activities are not likely to result in any short- or long-term adverse effects. By certifying eligibility under this criterion, you agree to comply with any conditions you must meet for your site's discharges and discharge-related activities to not likely result in any short- or long-term adverse effects. You must include copies of the correspondence with the participating agencies in your SWPPP and this NOI.
- ☐ Check to confirm you have provided documentation in your SWPPP as required by VI CGP Appendix C.

Documentation: Insert Text Here

Eligibility Criterion

Following the process outlined in Appendix C of the VI CGP, under which criterion are you eligible for coverage under this permit?

---

- ☐ Criterion E: ESA Section 7 consultation has successfully concluded. Consultation between a Federal agency and the USFWS and/or NMFS under section 7 of the ESA has concluded. Consultations can be either formal or informal, and would have occurred only as a result of a separate Federal action (e.g., during application for an individual wastewater discharge permit or the issuance of a wetlands dredge and fill permit), and the consultation must have addressed the effects of your construction activity's discharges and discharge-related activities on all ESA-listed threatened or endangered species and all designated critical habitat under the jurisdiction of each Service, as appropriate, in your action area. The result of this consultation must be either:
- i. A biological opinion currently in effect that determined that the action in question (taking into account the effects of your facility's discharges and discharge-related activities) is likely to adversely affect, but is not likely to jeopardize the continued existence of listed species or result in the destruction or adverse modification of critical habitat. The biological opinion must have included the effects of your facility's discharges and discharge-related activities on all the listed species and designated critical habitat in your action area under the jurisdiction of each Service, as appropriate. To be eligible under (i), any reasonable and prudent measures specified in the incidental take statement must be implemented;
  - ii. Written concurrence (e.g., letter of concurrence) from the applicable Service(s) with a determination that your facility's discharges and discharge-related activities are not likely to adversely affect ESA-listed species and/or designated critical habitat. The concurrence letter must have included the effects of your facility's discharges and discharge-related activities on all the ESA-listed species and/or designated critical habitat on your species list(s) acquired from USFWS and/or NMFS as part of this worksheet.

The consultation does not warrant reinitiation under 50 CFR §402.16; or, if reinitiation of consultation is required (e.g., due to a new species listing, critical habitat designation, or new information), the Federal action agency has reinitiated the consultation and the result of the consultation is consistent with the statements above. (Note: you must include any reinitiation documentation from the Services or consulting Federal agency with your NOI.) -

- ☐ Check to confirm you have provided documentation in your SWPPP as required by VI CGP Appendix C.

Documentation: Insert Text Here

#### Eligibility Criterion

Following the process outlined in Appendix C of the VI CGP, under which criterion are you eligible for coverage under this permit?

---

- ☐ Criterion F: Issuance of section 10 permit. Potential take is authorized through the issuance of a permit under section 10 of the ESA by the USFWS and/or NMFS, and this authorization addresses the effects of the site's discharges and discharge-related activities on ESA-listed species and designated critical habitat. You must include copies of the correspondence between yourself and the participating agencies in your SWPPP and your NOI.
- ☐ Check to confirm you have provided documentation in your SWPPP as required by VI CGP Appendix C.

Documentation: Insert Text Here

### 3.2 *Historic Property Screening Process*

#### Appendix D, Step 1

Do you plan on installing any stormwater controls that require subsurface earth disturbance, including, but not limited to, any of the following stormwater controls at your site?

No subsurface earth disturbance of any stormwater controls is proposed for this project. Due to all stormwater runoff discharging into the coast and downstream flooding not being a concern, stormwater retention/detention via an infiltration basin is not proposed.

Temporary mulch berms have been installed on-site at the bottom of all downhill slopes for the area that has been partially cleared per an approved Permit Letter Request received in 2023. For the remaining brush and vegetation to be cleared, temporary mulch berms will be installed in a similar way. Permanent rock berms are proposed in locations within the project area, outside the two on-site ghuts to be field verified, that experience concentrated flow to account for any additional runoff rates and erosion. A copy of the Erosion Control Plan and Grading Plan are included in this Coastal Zone Management Permit Application.

#### Appendix D, Step 2

If you answered yes in Step 1, have prior professional cultural resource surveys or other evaluations determined that historic properties do not exist, or have prior disturbances at the site have precluded the existence of historic properties? ☐ YES ☐ NO

- If yes, no further documentation is required for Section 3.2 of the Template, and you may provide the prior documentation in your SWPPP.
- If no, proceed to Appendix D, Step 3.

#### Appendix D, Step 3

If you answered no in Step 2, have you determined that your installation of subsurface earth-disturbing stormwater controls will have no effect on historic properties? ☐ YES ☐ NO

- If yes, provide documentation of the basis for your determination.
- If no, proceed to Appendix D, Step 4.

#### Appendix D, Steps 4 and 5

If you answered no in Step 3, did the State Historic Preservation Officer (SHPO), Tribal Historic Preservation Office (THPO), or other Tribal representative (whichever applies) respond to you within 15 calendar days to indicate their views as to the likelihood that historic properties are potentially present on your site and may be impacted by the installation of stormwater controls that require subsurface earth disturbance? ☐ YES ☐ NO

- If yes, describe the nature of their response:
  - ☐ Written indication that no historic properties will be affected by the installation of stormwater controls.
  - ☐ Written indication that adverse effects to historic properties from the installation of stormwater controls can be mitigated by agreed upon actions.
  - ☐ No agreement has been reached regarding measures to mitigate effects to historic properties from the installation of stormwater controls.
  - ☐ Other:
- If no, no further documentation is required for Section 3.2 of the Template.

### 3.3 *Safe Drinking Water Act Underground Injection Control Requirements*

Do you plan to install any of the following controls? Check all that apply below.

No.

- ☐ Infiltration trenches (if stormwater is directed to any bored, drilled, driven shaft or dug hole that is deeper than its widest surface dimension, or has a subsurface fluid distribution system)
- ☐ Commercially manufactured pre-cast or pre-built proprietary subsurface detention vaults, chambers, or other devices designed to capture and infiltrate stormwater flow
- ☐ Drywells, seepage pits, or improved sinkholes (if stormwater is directed to any bored, drilled, driven shaft or dug hole that is deeper than its widest surface dimension, or has a subsurface fluid distribution system)

#### SECTION 4: EROSION AND SEDIMENT CONTROLS AND DEWATERING PRACTICES

##### 4.1 Natural Buffers or Equivalent Sediment Controls

###### Buffer Compliance Alternatives

Are there any receiving waters within 50 feet of your project's earth disturbances? ☐ YES ☒ NO

##### 4.2 Perimeter Controls

###### General

- The site is currently being cleared based on an approved Permit Letter Request. Excess cleared vegetation can be moved to the bottom of the downhill slopes of the project area and formed into a berm to prevent the runoff from carrying any sediment off-site. Other erosion control methods currently implemented on-site are mulch-in-place and silt fencing where both have proven to be very effective construction means and methods and will continue to be used throughout the duration of construction for the project.

###### Specific Perimeter Controls

| Mulch Berm                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                        |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description: Vegetation is being cleared with a low ground pressure skid steer or track excavator with a mulching attachment to remove and grind the trees and vegetation within 2 inches of the existing ground surface. All roots and stumps are being left in place with no soil/earth disturbances. Excess mulch can be formed into a berm at the bottom of the downhill slopes of the proposed work area for erosion control measures. |                                                                                                                                                                                                                        |
| Installation                                                                                                                                                                                                                                                                                                                                                                                                                                | 10/14/2025                                                                                                                                                                                                             |
| Maintenance Requirements                                                                                                                                                                                                                                                                                                                                                                                                                    | Berm should be inspected immediately after each rainfall event and at least daily during prolonged rainfall. Needed repairs to the berm must be made immediately. Remove any debris that comes into contact with berm. |

##### 4.3 Sediment Track-Out

###### General

- Temporary construction access/exit was installed in the northern part of the site, off Fortuna Road, to prevent track-out of sediment from the site while the approved clearing is being performed and shall remain in place until construction is completed.

###### Specific Track-Out Controls

| Stabilized Construction Exit                                                                                                                                 |                                                                                                        |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|
| Description: 50' long and 20' wide, 6" minimum depth gravel construction entrance. 2"-3" diameter crushed stone minimum to be placed over geotextile fabric. |                                                                                                        |
| Installation                                                                                                                                                 | 10/14/2025                                                                                             |
| Maintenance Requirements                                                                                                                                     | Add gravel when necessary to maintain effective construction entrance throughout project construction. |
| Design Specifications                                                                                                                                        | Details provided                                                                                       |

#### 4.4 *Stockpiles or Land Clearing Debris Piles Comprised of Sediment or Soil*

The construction may include small amounts of excavation of areas needing cut ins/steps within the steep slopes on-site for installation of the racking system, but no stockpiles of sediment are anticipated during construction of the project.

#### 4.5 *Minimize Dust*

##### General

- The Contractor is responsible for sweeping their own travel ways and the area located within 100 feet of the entrances and exits of the construction work zone. Sweeping will be conducted as needed to prevent the tracking of sediment/dust on the public roadway.

##### Specific Dust Controls

| Water Truck                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                          |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|
| Description: <ul style="list-style-type: none"><li>▪ During construction, the smallest practical portion of the project area will be disturbed at one time to minimize the potential for dust generation.</li><li>▪ A water truck will be used to wet exposed areas within the work limits as needed for dust suppression.</li><li>▪ As with the tact-out controls discussed above, sediments on the paved areas outside of the work limits will be removed by sweeping to suppress dust generated by vehicle traffic.</li></ul> |                                                                          |
| Installation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 10/14/2025                                                               |
| Maintenance Requirements                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Wet exposed areas within the work limits as needed for dust suppression. |
| Design Specifications                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Refer to project specifications.                                         |

#### 4.6 *Minimize Steep Slope Disturbances*

##### General

- Certain embankments and shoulders where work will be performed may feature steep slopes where cut ins and/or steps may need to be constructed for the installation of the proposed project on an as needed basis. Areas that require cut ins and/or steps shall be regularly inspected and protected from erosion with BMPs and Erosion Control Methods such as natural spray tack adhesive and additional silt fencing, as needed, before it results in sediment discharges/releases. Permanent stabilization will be provided by loaming and seeding slopes with grass in areas that appear bare after construction.

#### Specific Steep Slope Controls

| Slope Stabilization                                                       |                                                                                                                                                                                                                                                                                                                        |
|---------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description: Steep slopes work will be performed as work encounters them. |                                                                                                                                                                                                                                                                                                                        |
| Installation                                                              | 11/1/2025                                                                                                                                                                                                                                                                                                              |
| Maintenance Requirements                                                  | Contractor shall maintain erosion controls in a functional condition at all times, including inspections once every seven (7) calendar days and within 24 hours of the occurrence of a storm event that produces 0.25 inches or more of rain within a 24-hour period. All damaged areas shall be replaced immediately. |
| Design Specifications                                                     | Refer to project specifications.                                                                                                                                                                                                                                                                                       |

#### 4.7 Topsoil

##### General

- Native topsoil shall be preserved unless infeasible. Preserving native topsoil is not required where the intended function of a specific area of the site calls for topsoil to be disturbed or removed. If suitable topsoil is found in disturbed areas, it will be removed and stockpiled and temporarily seeded until ready to use.
- Vegetation will be cleared and mulched to be spread over topsoil. This mulch will prevent erosion of the topsoil during construction activities.

#### 4.8 Soil Compaction

##### General

- Vehicle and equipment use shall be avoided in areas where seeding and vegetative stabilization will occur to avoid compaction of soil. Prior to seeding in areas of disturbed soils, the contractor shall condition the soil as necessary to support vegetative growth.

#### 4.9 Storm Drain Inlets

Not required for this project.

#### 4.10 Constructed Site Drainage Feature

Not required for this project.

#### 4.11 Sediment Basins or Similar Impoundments

Not required for this project.

#### 4.12 Chemical Treatment

No chemical treatment is anticipated.

#### 4.13 Dewatering Practices

No dewatering is anticipated for this project.

#### 4.14 Other Stormwater Controls

None used.

#### 4.15 Site Stabilization

Total Amount of Land Disturbance Occurring at Any One Time

- ☐ Five Acres or less  
☒ More than Five Acres

|                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                         |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Seeding</b>                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                         |
| <input checked="" type="checkbox"/> Vegetative <input type="checkbox"/> Non-Vegetative<br><input type="checkbox"/> Temporary <input checked="" type="checkbox"/> Permanent                                                                                                           |                                                                                                                                                                                                                                                                                                         |
| <b>Description:</b> <ul style="list-style-type: none"> <li>Contractor shall implement and maintain stabilization measures that minimize erosion from any areas of exposed soil on the site. Disturbed soils will be seeded with a seed mix that matches existing grasses.</li> </ul> |                                                                                                                                                                                                                                                                                                         |
| Installation                                                                                                                                                                                                                                                                         | Refer to project schedule                                                                                                                                                                                                                                                                               |
| Completion                                                                                                                                                                                                                                                                           | Refer to project schedule                                                                                                                                                                                                                                                                               |
| Maintenance Requirements                                                                                                                                                                                                                                                             | <ul style="list-style-type: none"> <li>Any grassed areas disturbed by the work shall be restored with loam and seed.</li> <li>Contractor shall reseed and if necessary maintain until grass has grown.</li> <li>Landscaped areas disturbed by work shall be restored to existing conditions.</li> </ul> |
| Design Specifications                                                                                                                                                                                                                                                                | Refer to project specifications for seeding requirements.                                                                                                                                                                                                                                               |

|                                                                                                                                                                                    |                                                                                                                                                                                 |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Mulching</b>                                                                                                                                                                    |                                                                                                                                                                                 |
| <input type="checkbox"/> Vegetative <input checked="" type="checkbox"/> Non-Vegetative<br><input checked="" type="checkbox"/> Temporary <input type="checkbox"/> Permanent         |                                                                                                                                                                                 |
| <b>Description:</b> <ul style="list-style-type: none"> <li>Contractor shall mulch cleared vegetation and spread over disturbed areas to provide protection from erosion</li> </ul> |                                                                                                                                                                                 |
| Installation                                                                                                                                                                       | Refer to project schedule                                                                                                                                                       |
| Completion                                                                                                                                                                         | Refer to project schedule                                                                                                                                                       |
| Maintenance Requirements                                                                                                                                                           | <ul style="list-style-type: none"> <li>Mulch shall be reapplied in areas where mulch has been removed or no longer provides adequate protection during construction.</li> </ul> |

## SECTION 5: POLLUTION PREVENTION CONTROLS

### 5.1 *Potential Sources of Pollution*

#### Construction Site Pollutants

Potential sources of sediment come from: Clearing and grubbing activities, any site grading or excavation, vehicle tracking, topsoil stripping and stockpiling, and landscaping activities.

Potential pollutants and sources come from sanitary facilities, heavy equipment and vehicles, and materials storage areas.

| Pollutant-Generating Activity | Pollutants or Pollutant Constituents<br>(That could be discharged if exposed to stormwater) | Location on Site<br>(Or reference SWPPP site map where this is shown) |
|-------------------------------|---------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|
| Organic Fertilizer            | Nitrogen and phosphates                                                                     | Open seeded areas for final stabilization                             |
| Concrete                      | Limestone, sand, pH, chromium                                                               | Equipment pads, fence posts                                           |
| Hydraulic Oil/Fluids          | Mineral oil, petroleum distillates                                                          | Leaks or broken equipment                                             |
| Gasoline                      | Benzene, ethyl benzene, toluene, xylene, MTBE                                               | Staging areas                                                         |
| Diesel Fuel                   | Petroleum distillate, oil and grease, naphthalene, xylenes                                  | Staging areas                                                         |
| Antifreeze/coolant            | Ethylene glycol, propylene glycol, heavy metals (copper, lead, zinc)                        | Leaks or broken equipment hoses                                       |
| Temporary Sanitary Facilities | Bacteria, parasites, viruses, funguses                                                      | Staging areas                                                         |

## 5.2 Spill Prevention and Response

In the event of a spill an on-site spill kit shall be available to contain and remove the spill. In the event the spill cannot be contained and removed with the on-site spill kit, immediately notify emergency personnel.

## 5.3 Fueling and Maintenance of Equipment or Vehicles

### General

- A variety of vehicles and equipment will be used on-site. Care shall be taken to eliminate discharge of any spilled or leaked chemicals, including fuel, from the project area. All fueling will be performed off-site. When fueling must occur on-site, the area shall be protected by secondary containment.

### Specific Pollution Prevention Practices

| Daily Inspection                                                                                                                                                                                                                       |                                                                                  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|
| Description: All vehicles shall be inspected prior to use daily for leaks, damage, and other problems and brought up to the site superintendent. Leaks shall be repaired immediately, or the equipment shall be removed from the site. |                                                                                  |
| Implementation                                                                                                                                                                                                                         | Inspections are daily starting during mobilization until the end of the project. |
| Maintenance Requirements                                                                                                                                                                                                               | Daily inspections will occur prior to work.                                      |

## 5.4 Washing of Equipment and Vehicles

### General

- Equipment will generally be washed off location. When done on site, it shall be done in a contained area without detergents.

## 5.5 Storage, Handling, and Disposal of Building Products, Materials, and Wastes

### 5.5.1 Building Materials and Building Products

#### General

- Building materials will be stockpiled in a designated staging area when kept on site.

### 5.5.2 Pesticides, Herbicides, Insecticides, Fertilizers, and Landscape Materials

No pesticides, herbicides, or insecticides are anticipated to be used.

Landscape materials will be stored at a combined staging area and materials storage area.

| Storage in Containers in Materials Storage Area                          |                                                                                                                                                                                            |
|--------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description: Secure containers to contain materials in the staging area. |                                                                                                                                                                                            |
| Implementation                                                           | 11/1/2025                                                                                                                                                                                  |
| Maintenance Requirements                                                 | Inspections must be performed once every seven (7) calendar days and within 24 hours of the occurrence of a storm event that produces 0.25 inches or more of rain within a 24-hour period. |

#### 5.5.3 *Diesel Fuel, Oil, Hydraulic Fluids, Other Petroleum Products, and Other Chemicals*

No diesel fuel, oil, hydraulic fluids, or other petroleum products or other chemicals are anticipated to be stored on site.

#### 5.5.4 *Hazardous or Toxic Waste*

##### General

- Diesel fuel, oil, hydraulic fluids, other petroleum products, and other chemicals will be limited in scope of use and preferably stored off-Site; if they must be stored on site, they will be stored at a combined staging area and materials storage area within a secure and covered area. In the event of any spills, the spill must be reported to the appropriate authorities and the engineer.

#### 5.5.5 *Construction and Domestic Waste*

##### General

- Waste will be stored in appropriate waste containers in the staging area until disposed of. All waste shall be disposed of properly by the contractor in accordance with all local, state, and federal regulations. No waste shall be buried or dumped on the project site.

#### 5.5.6 *Sanitary Waste*

##### General

- Portable toilets may be provided at the site throughout the construction phase. Toilets will be secure to not be tipped or knocked over. Waste will be collected from the portable facilities as needed to keep sanitary conditions. Toilets will be inspected regularly for evidence of leaking holding tanks. Toilets with leaking holding tanks will be removed and replaced with new toilets.

#### 5.6 *Washing of Applicators and Containers used for Stucco, Paint, Concrete, Form Release Oils, Cutting Compounds, or Other Materials*

Not to be performed on site during construction.

#### 5.7 *Application of Fertilizers*

##### General

- Commercial fertilizer shall be a product complying with the local and United States fertilizer laws. Fertilizer for planting shall be formulated for top-dressing, soil surface application to plants. Fertilizer shall be designed and certified by the manufacturer to provide controlled release of fertilizer continuously for not less than 9 months. One hundred percent of the nitrogen content shall be derived from organic materials. Nitrogen source shall be coated to ensure slow release. Fertilizer will not be kept on-site and only small volumes will be brought for use.

#### 5.8 *Other Pollution Prevention Practices*

No other pollution prevention practices are anticipated.

SECTION 6: INSPECTION, MAINTENANCE, AND CORRECTIVE ACTION

6.1 *Inspection Personnel and Procedures*

Site Inspection Schedule

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Standard Frequency:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <input checked="" type="checkbox"/> Every 7 calendar days<br><input type="checkbox"/> Every 14 calendar days and within 24 hours of either: <ul style="list-style-type: none"><li>▪ A storm event that produces 0.25 inches or more of rain within a 24-hour period (including when there are multiple, smaller storms that alone produce less than 0.25 inches but together produce 0.25 inches or more in 24 hours), or</li><li>▪ A storm event that produces 0.25 inches or more of rain within a 24-hour period on the first day of a storm and continues to produce 0.25 inches or more of rain on subsequent days (you conduct an inspection within 24 hours of the first day of the storm and within 24 hours after the last day of the storm that produces 0.25 inches or more of rain (i.e., only two inspections would be required for such a storm event)), or</li><li>▪ A discharge caused by snowmelt from a storm event that produces 3.25 inches or more of snow within a 24-hour period.</li></ul> |
| <b>Increased Frequency (if applicable):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| For areas of sites discharging to sediment or nutrient-impaired waters or to waters designated as Tier 2, Tier 2.5, or Tier 3<br><input type="checkbox"/> Every 7 days and within 24 hours of either: <ul style="list-style-type: none"><li>▪ A storm event that produces 0.25 inches or more of rain within a 24-hour period, or</li><li>▪ A discharge caused by snowmelt from a storm event that produces 3.25 inches or more of snow within a 24-hour period.</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Reduced Frequency (if applicable)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| For stabilized areas<br><input type="checkbox"/> Twice during first month, no more than 14 calendar days apart; then once per month after first month until permit coverage is terminated consistent with Part 8 in any area of your site where the stabilization steps in 2.2.1.2a and 2.2.1.2b have been completed.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>For stabilized areas on “linear construction sites” (as defined in Appendix A)</b><br><input type="checkbox"/> Twice during first month, no more than 14 calendar days apart; then once more within 24 hours of a storm event that produces 0.25 inches or more of rain within a 24-hour period, or within 24 hours of a snowmelt discharge from a storm event that produces 3.25 inches or more of snow within a 24-hour period                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

Stormwater Pollution Prevention Plan (SWPPP)  
Proposed Solar Energy Facility with Battery Storage – Fortuna

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>For arid, semi-arid, or drought-stricken areas during seasonally dry periods or during drought</p> <p><input type="checkbox"/> Once per month and within 24 hours of either:</p> <ul style="list-style-type: none"><li>▪ A storm event that produces 0.25 inches or more of rain within a 24-hour period, or</li><li>▪ A snowmelt discharge from a storm event that produces 3.25 inches or more of snow within a 24-hour period.</li></ul> <p>Insert beginning and ending month identified as the seasonally dry period for your area or the valid period of drought:</p> <ul style="list-style-type: none"><li>▪ Beginning month of the seasonally dry period: 1/1/2024</li><li>▪ Ending month of the seasonally dry period: 4/30/2024</li></ul> |
| <p>For frozen conditions where construction activities are being conducted</p> <p><input type="checkbox"/> Once per month</p> <p>Insert beginning and ending dates of frozen conditions on your site:</p> <ul style="list-style-type: none"><li>▪ Beginning date of frozen conditions: Insert approximate date</li><li>▪ Ending date of frozen conditions: Insert approximate date</li></ul>                                                                                                                                                                                                                                                                                                                                                          |
| <p>For frozen conditions where construction activities are suspended</p> <p><input type="checkbox"/> Inspections are temporarily suspended</p> <p>Insert beginning and ending dates of frozen conditions on your site:</p> <ul style="list-style-type: none"><li>▪ Beginning date of frozen conditions: Insert approximate date</li><li>▪ Ending date of frozen conditions: Insert approximate date</li></ul>                                                                                                                                                                                                                                                                                                                                         |

Dewatering Inspection Schedule

|                                                                                                 |
|-------------------------------------------------------------------------------------------------|
| <b>Dewatering Inspection</b>                                                                    |
| <p><input type="checkbox"/> Once per day on which the discharge of dewatering water occurs.</p> |

Rain Gauge Location (if applicable)  
<https://forecast.weather.gov/MapClick.php?lat=17.7123&lon=-64.8436>

Inspection Report Forms  
See Appendix D of this SWPPP for Site Inspection Report Form

**6.2     Corrective Action**

Personnel Responsible for Corrective Actions  
Christian Loranger  
508-965-8637  
[nbsdolar@gmail.com](mailto:nbsdolar@gmail.com)

Corrective Action Logs  
See Appendix E of this SWPPP for Corrective Action Logs

6.3 *Delegation of Authority*

Duly Authorized Representative(s) or Position(s):

STF Solar, LLC  
Subsidiary of Vlelectron, LLC  
Christian Loranger  
Owner  
5000 Est. Enighed, Ste 4a PMB 146 St. John, U.S.V.I 00830  
Phone: 508-965-8637  
nbd solar@gmail.com

VIELECTRON, LLC  
Christian Loranger  
Operator  
5000 Est. Enighed, Ste 4a PMB 146 St. John, U.S.V.I 00830  
Phone: 508-965-8637  
nbd solar@gmail.com

SECTION 7: TURBIDITY BENCHMARK MONITORING FOR DEWATERING DISCHARGES

Not anticipated for this project

SECTION 8: CERTIFICATION AND NOTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I have no personal knowledge that the information submitted is other than true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name: Christian Loranger Title: Owner / Developer / Operator

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

SWPPP APPENDICES

Attach the following documentation to the SWPPP:

*Appendix A – Site Maps*

*Appendix B – Copy of 2012 VI CGP*

*Appendix C – NOI and EPA Authorization Email*

*Appendix D – Site Inspection Form and Dewatering Inspection Form (if applicable)*

*Appendix E – Corrective Action Log*

*Appendix F – SWPPP Amendment Log*

*Appendix G – Subcontractor Certifications/Agreements*

*Appendix H – Grading and Stabilization Activities Log*

*Appendix I – Training Documentation*

*Appendix J – Delegation of Authority*

*Appendix K – Endangered Species Documentation*

*Appendix L – Historic Preservation Documentation*

*Appendix M – Rainfall Gauge Recording*

*Appendix N – Turbidity **Mefer Manual and Manufacturer's Instructions***

Stormwater Pollution Prevention Plan (SWPPP)  
Proposed Solar Energy Facility with Battery Storage – Fortuna

Appendix A – Site Maps

1. THE PURPOSE OF THIS PROJECT IS TO DEVELOP A PROPOSED SOLAR ENERGY FACILITY WITH BATTERIES STORAGE LOCATED ON 2 & 3B FORTUNA OF ESTATE FORTUNA..
2. ONCE THE SITE IS CLEARED TO CONDUCT INVESTIGATIONS, A PHASE 1 CULTURAL RESOURCE STUDY SHALL BE PERFORMED. A CONSULTANT IS ON BOARD TO PREPARE DOCUMENTATION THAT WILL MEET DPMR STANDARDS.
3. ALL LAND CLEARING SHALL BE COMPLETED WITH A LOW GROUND PRESSURE SKID STEER OR TRACK EXCAVATOR WITH A MULCHING ATTACHMENT TO REMOVE AND GRIND THE TREES AND VEGETATION WITHIN 2-INCHES OF THE EXISTING GROUND SURFACE. ALL ROOTS AND STUMPS SHALL REMAIN IN PLACE WITH NO SOIL DISTURBANCES.
4. THE CONSTRUCTION METHODS WILL PRESERVE ALL TOPSOIL AND WILL ALLOW THE REMOVAL OF THE EXISTING VEGETATION TO REMAIN FOR SOIL STABILIZATION. IN AREAS OF TRENCHING FOR UNDERGROUND ELECTRICAL CONDUITS, THE TOPSOIL WILL BE TEMPORARY PLACED ADJACENT TO THE TRENCH UNTIL THE CONDUIT IS INSTALLED. THE TRENCHES WILL THEN BE BACKFILLED TO EXISTING GRADES, COMPACTED AND RE-VEGETATED.
5. THE MULCHED VEGETATION AND EXISTING ROOT STRUCTURES WILL PROVIDE THE NECESSARY EROSION AND SEDIMENT CONTROL.
6. NO MAJOR EARTH CHANGING ACTIVITIES ARE PROPOSED FOR THE PROJECT. ALL EARTH RAKING WILL FOLLOW THE EXISTING TERRAIN. EROSION AND SEDIMENT CONTROL WILL BE IMPLEMENTED AS OUTLINED ABOVE.
7. THE EXISTING TERRAIN, STORMWATER FLOW PATHS AND GROUND COVER WILL NOT BE CHANGED BY THE CONSTRUCTION OF THIS PROJECT. CURRENTLY STORMWATER SHEET FLOWS SOUTH AND DISCHARGES INTO THE CARIBBEAN SEA. THE DEVELOPMENT OF THE SITE WILL RESULT IN A MINIMAL INCREASE IN IMPERVIOUS COVER FROM THE GROUND SCREWS, EQUIPMENT PADS AND ACCESS DRIVEWAY AS THE AREA BELOW AND AROUND THE PANELS WILL REMAIN PERMANENTLY WITH ESTABLISHED VEGETATION. THERE ARE MINIMAL CONCERNS WITH DOWNSTREAM FLOODING DUE TO THE SITE DISCHARGING INTO THE SEA; THEREFORE, NO INFILTRATION BASIN IS PROPOSED FOR RETENTION PURPOSES. PERMANENT ROCK BERM SERIES ARE PROPOSED IN AREAS ON-SITE WITH CONCENTRATED FLOW PATHS TO REDUCE PEAK RUNOFF RATES AND PREVENT EROSION.
8. THE SITE SHALL BE INSPECTED ON A WEEKLY BASIS AND AFTER ALL MAJOR STORM EVENTS. ANY DEFICIENCIES IN EROSION AND SEDIMENT CONTROL OR VEGETATION SHALL BE CORRECTED IN A TIMELY MANNER.
9. THERE IS NO PROPOSED WATER, SEWER OR LIGHTING AS PART OF THIS PROJECT.
10. ALL ITEMS TO BE DEMOLISHED SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR IN ACCORDANCE WITH ALL GOVERNING AGENCIES.

1. SURVEY AND STAKE LIMITS OF ALL WORK.
2. CONSTRUCT STABILIZED CONSTRUCTION ENTRANCES AS SHOWN ON PLANS.
3. INSTALL SILT FENCE (OR APPROVED EQUAL) PERIMETER EROSION CONTROL MEASURES.
4. CLEAR TREES, BRUSH AND VEGETATION WITHIN SECURITY FENCE AND AROUND THE PERIMETER AS SHOWN.
5. INSTALL 7" HIGH CHAINLINK SECURITY FENCING AND GATES AS SHOWN.
6. OBTAIN DPW DRIVEWAY PERMITS AND CONSTRUCT 20' WIDE GRAVEL ACCESS DRIVEWAYS AND TURNAROUND.
7. CONSTRUCT STORMWATER BASIN AND ROCK BERM(S).
8. INSTALL SOLAR RACKING SCREWS
9. CONSTRUCT SOLAR RACKING AND INSTALL SOLAR PANELS ON RACKING.
10. INSTALL UNDERGROUND CONDUIT, PV INVERTERS, EQUIPMENT PADS, BATTERIES AND POWER POLES.
11. APPLY GUINEA GRASS (MEGATHYRSUS MAXIMUS) SEED TO ANY DISTURBED VEGETATION AREAS THROUGHOUT THE SITE.

1. THE OWNER IN CONJUNCTION WITH THE CONTRACTOR (OPERATOR) NEEDS TO OBTAIN A CONSTRUCTION GENERAL PERMIT (CGP) FOR LARGE CONSTRUCTION ACTIVITIES (FIVE OR MORE ACRES) FROM THE ENVIRONMENTAL PROTECTION AGENCY (EPA). AS PART OF THE CGP, A STORM WATER NOTICE OF INTENT (NOI) WILL NEED TO BE SUBMITTED TO THE EPA AT LEAST 48 HOURS PRIOR TO COMMENCING CONSTRUCTION. THE NOI WILL NEED TO BE SUBMITTED TO STORM WATER NOTICE OF INTENT (4203M), USEPA, 1200 PENNSYLVANIA, AVE. NW, WASHINGTON, DC 20460.
2. THE CGP OUTLINES A SET OF PROVISIONS MANDATING THE OWNER AND CONTRACTOR COMPLY WITH THE REQUIREMENTS OF THE TERRITORIAL VIRGIN ISLANDS STORM WATER POLLUTION PREVENTION PLANS (VI SWPPP) STORM WATER REGULATIONS, INCLUDING BUT NOT LIMITED TO, STORM WATER POLLUTION PREVENTION PLANS (SWPPP'S), IMPLEMENTATION OR EROSION AND SEDIMENTATION CONTROLS, EQUIPMENT MAINTENANCE GUIDELINES, ETC. PLEASE CONTACT USEPA OFFICE OF WASTEWATER MANAGEMENT AT 202-564-9545 OR AT [WWW.EPA.GOV/NPDES/STORMWATER](http://WWW.EPA.GOV/NPDES/STORMWATER) FOR ADDITIONAL INFORMATION.

1. ALL EROSION CONTROL MEASURE SHALL CONFORM TO THE GUIDELINES AND REQUIREMENTS PROVIDED IN THE VIRGIN ISLANDS ENVIRONMENTAL PROTECTION HANDBOOK (VIEPH), 2022 EDITION. THE HANDBOOK MAY BE DOWNLOADED ONLINE OR PURCHASED FROM THE UNIVERSITY OF THE VIRGIN ISLANDS, COOPERATIVE EXTENSION SERVICE.
2. BEFORE ANY EARTH MOVING ACTIVITIES, AND THEREAFTER, EROSION CONTROL MEASURES ARE TO BE IMPLEMENTED AS NOTED. THE SMALLEST PRACTICAL AREA OF LAND (5 ACRES MAXIMUM) SHOULD BE EXPOSED AT ANY ONE TIME DURING DEVELOPMENT. WHEN LAND IS EXPOSED DURING DEVELOPMENT, THE EXPOSURE SHOULD BE KEPT TO A MAXIMUM OF 72 HOURS BEFORE APPLYING TEMPORARY OR PERMANENT EROSION CONTROL MEASURES. CONFINED PERIOD OF DISTURBED AND UNSTABILIZED SOILS TO A MAXIMUM OF FORTY-FIVE DAYS. ALL DITCHES AND SWALES ARE REQUIRED TO BE STABILIZED PRIOR TO DIRECT RECEIPT OF ANY FLOW.
3. REFER TO DWG C5 AND C6 FOR ADDITIONAL EROSION CONTROL NOTES AND DETAILS.



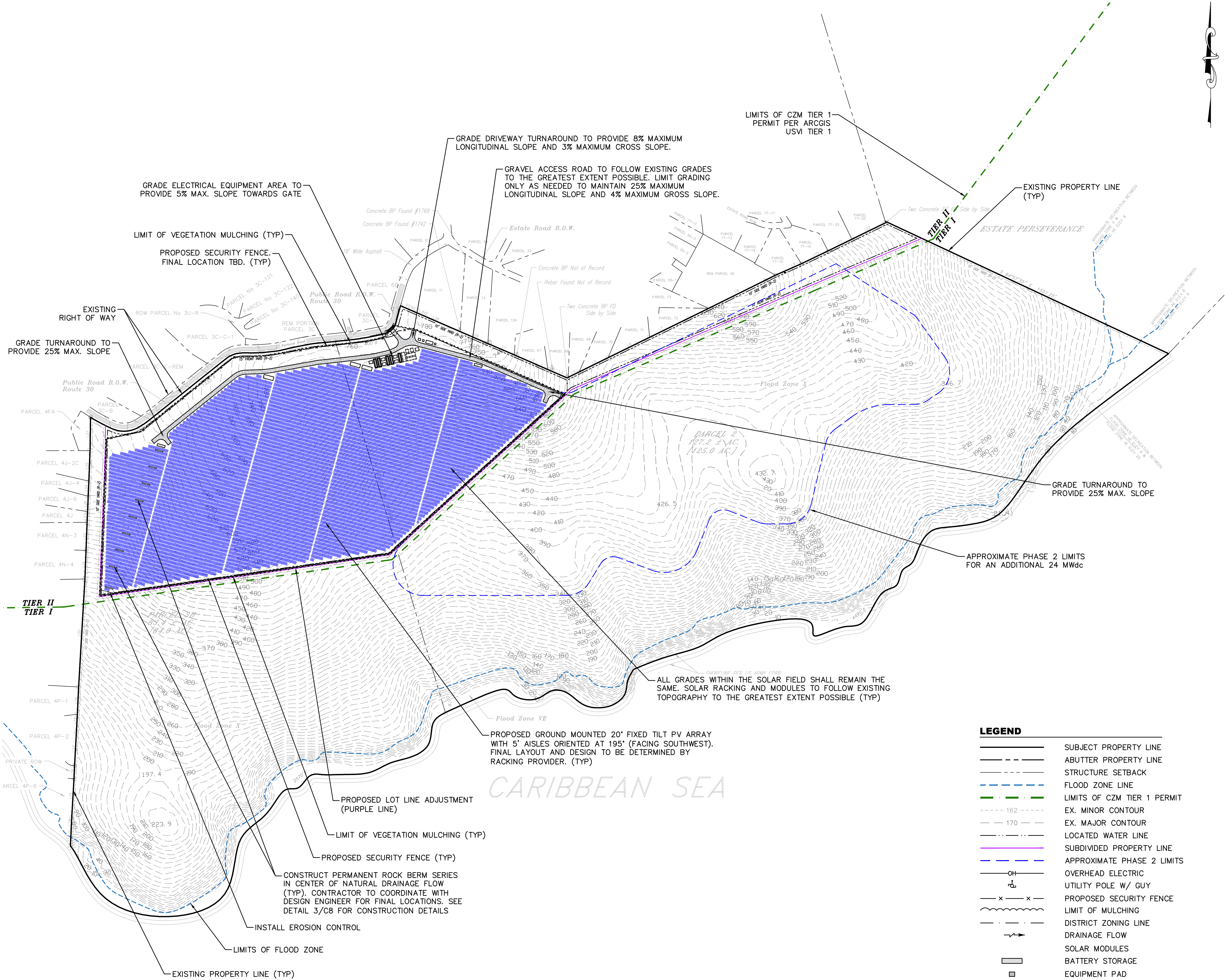
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| FOR PERMITTING PURPOSES ONLY                                                                                                       |  |                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                  |                      |                 |                   |   |                                                         |          |
| APPLICANT<br><br>STF SOLAR, LLC<br>A VEELECTRON LLC COMPANY<br>5000 EST. ENIGHEID, STA 4A, PMB 146<br>SAINT JOHN, VI 00830         |  | <br><b>HOYLE<br/>TANNER</b><br><br>95 E. Mitchell Hammock Road<br>Suite 200<br>Oviedo, FL 32765<br>(407) 380-1919<br>www.hoyletanner.com | THIS DOCUMENT IS PREPARED AS AN INSTRUMENT OF SERVICE AND SHALL REMAIN THE PROPERTY OF HOYLE, TANNER. IT MAY NOT BE REPRODUCED OR TRANSMITTED IN ANY MANNER, INCLUDING ELECTRONICALLY, FOR ANY OTHER PURPOSE THAN THIS PROJECT, WITHOUT THE WRITTEN PERMISSION OF HOYLE, TANNER. |                      |                 |                   | 1 | ISSUED FOR DPNR & DPW PERMITTING – NOT FOR CONSTRUCTION | 10/15/25 |
|                                                                                                                                    |  |                                                                                                                                                                                                                               | REV.                                                                                                                                                                                                                                                                             | REVISION DESCRIPTION | DATE            |                   |   |                                                         |          |
|                                                                                                                                    |  |                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                  |                      |                 |                   |   |                                                         |          |
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|                                                                                                                                    |  |                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                  |                      |                 |                   |   |                                                         |          |
|                                                                                                                                    |  |                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                  |                      |                 |                   |   |                                                         |          |
|                                                                                                                                    |  |                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                  |                      |                 |                   |   |                                                         |          |
| PROJECT<br><br>PROPOSED SOLAR ENERGY FACILITY (PHASE 1)<br>FORTUNA 3B & 2 WEST END QTR<br>ESTATE FORTUNA<br>SAINT THOMAS, VI 00802 |  | SCALE:<br>AS SHOWN                                                                                                                                                                                                            | DATE:<br>SEPTEMBER 5, 2024                                                                                                                                                                                                                                                       | DESIGNED BY<br>SES   | DRAWN BY<br>SES | CHECKED BY<br>WRD |   |                                                         |          |
| SITE PREP / EROSION CONTROL PLAN                                                                                                   |  |                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                  |                      |                 |                   |   |                                                         |          |
| C3                                                                                                                                 |  |                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                  |                      |                 |                   |   |                                                         |          |
| PROJECT NO. 23.141001.00                                                                                                           |  |                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                  |                      |                 |                   |   |                                                         |          |
| SHEET 3 OF 8                                                                                                                       |  |                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                  |                      |                 |                   |   |                                                         |          |

GRADING NOTES

- THE PURPOSE OF THIS PLAN IS TO DEPICT THE PROPOSED SITE GRADING FOR A SOLAR FACILITY WITH BATTERY STORAGE LOCATED AT PARCEL NO. 2 & 3B ESTATE FORTUNA.
- LAYOUT ALL WORK, ESTABLISH GRADES, LOCATE EXISTING UNDERGROUND UTILITIES, SET NECESSARY MARKERS AND STAKE AND SET UP NECESSARY BARRICADES AND PROTECTION FACILITIES PRIOR TO THE BEGINNING OF ANY GRADING, EXCAVATION OR TRENCHING OPERATIONS.
- IN AREAS OF GRADING, THE SUBGRADE SHALL BE LOOSENED BY SCARIFYING TO A DEPTH OF AT LEAST 2" TO ENSURE BONDING OF THE TOPSOIL AND SUBSOIL.
- AREAS OF EXCAVATION ACTIVITIES SHALL BE RESTORED TO A MINIMUM OF 4" OF SEEDED TOPSOIL, FERTILIZER, AND MULCH.
- CONTRACTOR'S WORK INCLUDES, BUT IS NOT LIMITED TO, PROVIDING ALL LABOR, MATERIALS, EQUIPMENT, SUPERVISION, QUALITY CONTROL, AND INCIDENTALS NECESSARY TO EXCAVATE, DEWATER AND CONTROL SURFACE WATER, BACKFILL, CONDUCT COMPACTION AND TESTING OF MATERIALS, ROUGH GRADE, AND REMOVE SEDIMENT AND SOIL AND OTHER SUBSURFACE MATERIALS IN ACCORDANCE WITH THE DESIGN DOCUMENTS, APPLICABLE LAW, APPLICABLE PERMITS, AND PROJECT AGREEMENTS.
- ALL STAKING AND LAYOUT WORK REQUIRED FOR WORK INCLUDED UNDER THIS SECTION SHALL BE THE RESPONSIBILITY OF CONTRACTOR. CONTRACTOR SHALL ESTABLISH ALL REFERENCE POINTS, LAY OUT THE WORK, AND BE RESPONSIBLE FOR ALL LINES, ELEVATIONS, MEASUREMENTS AND OTHER GRADING OPERATIONS.
- UNIFORMLY GRADE AREAS WITHIN SPECIFIED LIMITS, INCLUDING ADJACENT TRANSITIONS. SMOOTH FINISHED SURFACES WITHIN SPECIFIED TOLERANCES, COMPACT WITH UNIFORM LEVELS OR SLOPES BETWEEN POINTS INDICATED, IN DESIGN DOCUMENTS.
- PERCENTAGES OF MAXIMUM DENSITY REQUIREMENTS: COMPACT TO THE PERCENTAGES OF MAXIMUM DENSITY, DETERMINED IN ACCORDANCE WITH ASTM D1557 AND DESIGN DOCUMENTS.
  - GRAVEL DRIVEWAY: COMPACT TOP 8 INCHES OF SUBGRADE AND EACH LAYER OF FILL MATERIAL AT 95 PERCENT MAXIMUM DENSITY OR AS REQUIRED.
  - LANDSCAPE AREAS: COMPACT TOP 6 INCHES OF SUBGRADE AND EACH LAYER OF FILL MATERIAL AT 85 PERCENT MAXIMUM DENSITY, OR AS REQUIRED.
  - EQUIPMENT PADS: THE UPPER 12 INCHES OF SUBGRADE SHALL BE COMPACTED TO 95 PERCENT RELATIVE COMPACTION, OR AS REQUIRED.
- MATERIAL DISPOSAL AND STORAGE SITES
  - SUITABLE EXCAVATED MATERIALS MAY BE STOCKPILED AND RE-USED IN SYSTEM CONSTRUCTION.
  - DISPOSE OF UNSUITABLE OR EXCESS EXCAVATED AND WASTE MATERIALS IN ACCORDANCE WITH APPLICABLE LAW AND APPLICABLE PERMITS.
  - CONTRACTOR STOCKPILE AND LAYDOWN AREAS SHALL BE DEVELOPED AND MAINTAINED IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONSTRUCTION DESIGN DOCUMENTS.
- EMBANKMENTS AND BACKFILL SURROUNDING STRUCTURES SHALL BE COMPACTED TO A MINIMUM OF 95 PERCENT.
- EARTH SLOPES SHALL NOT EXCEED 3 HORIZONTAL TO 1 VERTICAL UNLESS SHOWN OTHERWISE.

EROSION CONTROL NOTES:

- REFER TO DWG C6 FOR ADDITIONAL EROSION CONTROL NOTES AND DETAILS.
- ADDITIONAL EROSION CONTROL MAY BE REQUIRED DEPENDING ON ACTUAL SITE CONDITIONS AND CONSTRUCTION METHODS. THE CONTRACTOR IS RESPONSIBLE FOR IMPLEMENTING ALL EROSION AND SEDIMENT CONTROL DEVICES NEEDED TO PREVENT RUNOFF TO THE COAST AND OFFSITE.
- THE CONTRACTOR SHALL STABILIZE ANY AND ALL DITCHES AND SWALES PRIOR TO DIRECTING STORMWATER RUN-OFF TO THEM.
- ACCESS DRIVEWAYS MUST BE STABILIZED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
- EROSION CONTROL MEASURES ARE TO BE INSPECTED WEEKLY AND AFTER EVERY 0.25" OF RAINFALL WITHIN A 24 HOUR PERIOD.
- UNSTABILIZED AREAS SHALL BE TEMPORARILY STABILIZED WITHIN 72 HOURS OF FINAL GRADING, OR PRIOR TO A 0.25" STORM OCCURRING AFTER THE DISTURBANCE, WHICHEVER OCCURS SOONER.
- TEMPORARY STABILIZATION MEASURES MUST REMAIN IN PLACE THROUGH ALL CONSTRUCTION PHASES, UNTIL THE SITE IS PERMANENTLY STABILIZED.
- THE SITE SHALL BE STABILIZED BY ESTABLISHING AT LEAST 95% VEGETATIVE COVER UNIFORMLY DISTRIBUTED, INCLUDING UNDER THE PANELS.
- PROVIDE EROSION CONTROL MATTING ON ALL 3:1 OR GREATER SLOPES.
- ALL TEMPORARY EROSION CONTROL MEASURES SHALL BE REMOVED AFTER THE SITE HAS BEEN STABILIZED.



FOR  
PERMITTING  
PURPOSES  
ONLY

| DATE                 | 10/15/25                                                |
|----------------------|---------------------------------------------------------|
| REVISION DESCRIPTION | ISSUED FOR DP&R & DPW PERMITTING - NOT FOR CONSTRUCTION |
| REV.                 | 1                                                       |

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DESIGNED BY  
SES

CHECKED BY  
WRD

DRAWN BY  
SES

DATE:  
SEPTEMBER 5, 2024

SCALE:  
AS SHOWN



APPLICANT  
STF SOLAR, LLC  
A VIELECTRON, LLC COMPANY  
5000 EST ENGLISH ST. 4A, PNB 146  
SAINT JOHN, VI 00830

PROJECT  
PROPOSED SOLAR ENERGY FACILITY (PHASE 1)  
FORTUNA 3B & 2 WEST END QTR  
ESTATE FORTUNA  
SAINT THOMAS, VI 00802

GRADING & DRAINAGE  
PLAN

C5

PROJECT NO. 23.141001.00

SHEET 5 OF 8

Stormwater Pollution Prevention Plan (SWPPP)  
Proposed Solar Energy Facility with Battery Storage – Fortuna

Appendix B – Copy of 2012 VI CGP

Stormwater Pollution Prevention Plan (SWPPP)  
Proposed Solar Energy Facility with Battery Storage – Fortuna

Appendix C – Copy of NOI and EPA Authorization Email

Stormwater Pollution Prevention Plan (SWPPP)  
Proposed Solar Energy Facility with Battery Storage – Fortuna

Appendix D – Copy of Site and Dewatering Inspection Forms

| Section A – General Information<br>(If necessary, complete additional inspection reports for each separate inspection location.)                                                                                                                                                                                                                                                                                                                                                                                                                 |                                       |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|
| Inspector Information                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                       |
| Inspector Name:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Title:                                |
| Company Name:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Email:                                |
| Address:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Phone Number:                         |
| Inspection Details                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                       |
| Inspection Date:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Inspection Location:                  |
| Inspection Start Time:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Inspection End Time:                  |
| Current Phase of Construction:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Weather Conditions During Inspection: |
| <p>Did you determine that any portion of your site was unsafe for inspection per CGP Part 4.5? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>If “Yes,” provide the following information:</p> <p>Location of unsafe conditions:</p> <p>The conditions that prevented you inspecting this location:</p>                                                                                                                                                                                                                         |                                       |
| Indicate the required inspection frequency: (Check all that apply. You may be subject to different inspection frequencies in different areas of the site.)                                                                                                                                                                                                                                                                                                                                                                                       |                                       |
| <p>Standard Frequency (CGP Part 4.2):</p> <p><input type="checkbox"/> At least once every 7 calendar days; OR</p> <p><input type="checkbox"/> Once every 14 calendar days <i>and</i> within 24 hours of the occurrence of either:</p> <ul style="list-style-type: none"> <li>• A storm event that produces 0.25 inches or more of rain within a 24-hour period, or</li> <li>• A snowmelt discharge from a storm event that produces 3.25 inches or more of snow within a 24-hour period</li> </ul>                                               |                                       |
| <p>Increased Frequency (CGP Part 4.3.1) (If site discharges to sediment or nutrient-impaired waters or to waters designated as Tier 2, Tier 2.5, or Tier 3):</p> <p><input type="checkbox"/> Once every 7 calendar days <i>and</i> within 24 hours of the occurrence of either:</p> <ul style="list-style-type: none"> <li>• A storm event that produces 0.25 inches or more of rain within a 24-hour period, or</li> <li>• A snowmelt discharge from a storm event that produces 3.25 inches or more of snow within a 24-hour period</li> </ul> |                                       |

## Reduced Frequency (CGP Part 4.4):

- ☐ For stabilized areas: Twice during first month, no more than 14 calendar days apart; then once per month after first month until permit coverage is terminated
- ☐ For stabilized areas on "linear construction sites": Twice during first month, no more than 14 calendar days apart; then once more within 24 hours of the occurrence of either:
- A storm event that produces 0.25 inches or more of rain within a 24-hour period, or
  - A snowmelt discharge from a storm event that produces 3.25 inches or more of snow within a 24-hour period
- ☐ For arid, semi-arid, or drought-stricken areas during seasonally dry periods or during drought: Once per month and within 24 hours of the occurrence of either:
- A storm event that produces 0.25 inches or more of rain within a 24-hour period, or
  - A snowmelt discharge from a storm event that produces 3.25 inches or more of snow within a 24-hour period
- ☐ For frozen conditions where construction activities are being conducted: Once per month

Was this inspection triggered by a storm event producing 0.25 inches or more of rain within a 24-hour period? ☐ Yes ☐ No

If "Yes," how did you determine whether the storm produced 0.25 inches or more of rain?

- ☐ On-site rain gauge
- ☐ Weather station representative of site.  
Weather station location:

Total rainfall amount that triggered the inspection (inches):

Was this inspection triggered by a snowmelt discharge from a storm event producing 3.25 inches or more of snow within a 24-hour period? ☐ Yes ☐ No

If "Yes," how did you determine whether the storm produced 3.25 inches or more of snow?

- ☐ On-site rain gauge
- ☐ Weather station representative of site.  
Weather station location:

Total snowfall amount that triggered the inspection (inches):

| Section B – Condition and Effectiveness of Erosion and Sediment (E&S) Controls (CGP Part 2.2)<br>(Insert additional rows if needed)                                                                                                                                                                                                                                                |                                                          |                                                                                          |                                                          |                                                         |                                    |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|------------------------------------------------------------------------------------------|----------------------------------------------------------|---------------------------------------------------------|------------------------------------|
| Type and Location of E&S Control                                                                                                                                                                                                                                                                                                                                                   | Conditions Requiring Routine Maintenance? <sup>1</sup>   | If “Yes,” How Many Times (Including This Occurrence) Has This Condition Been Identified? | Conditions Requiring Corrective Action? <sup>2, 3</sup>  | Date on Which Condition First Observed (If Applicable)? | Description of Conditions Observed |
| 1.                                                                                                                                                                                                                                                                                                                                                                                 | <input type="checkbox"/> Yes <input type="checkbox"/> No |                                                                                          | <input type="checkbox"/> Yes <input type="checkbox"/> No |                                                         |                                    |
| 2.                                                                                                                                                                                                                                                                                                                                                                                 | <input type="checkbox"/> Yes <input type="checkbox"/> No |                                                                                          | <input type="checkbox"/> Yes <input type="checkbox"/> No |                                                         |                                    |
| 3.                                                                                                                                                                                                                                                                                                                                                                                 | <input type="checkbox"/> Yes <input type="checkbox"/> No |                                                                                          | <input type="checkbox"/> Yes <input type="checkbox"/> No |                                                         |                                    |
| 4.                                                                                                                                                                                                                                                                                                                                                                                 | <input type="checkbox"/> Yes <input type="checkbox"/> No |                                                                                          | <input type="checkbox"/> Yes <input type="checkbox"/> No |                                                         |                                    |
| 5.                                                                                                                                                                                                                                                                                                                                                                                 | <input type="checkbox"/> Yes <input type="checkbox"/> No |                                                                                          | <input type="checkbox"/> Yes <input type="checkbox"/> No |                                                         |                                    |
| <p>If the same routine maintenance was found to be necessary three or more times for the same control at the same location (including this occurrence), follow the corrective action requirements and record the required information in your corrective action log, or describe here why you believe the specific condition should still be addressed as routine maintenance:</p> |                                                          |                                                                                          |                                                          |                                                         |                                    |

<sup>1</sup> Routine maintenance includes minor repairs or other upkeep performed to ensure that the site's stormwater controls remain in effective operating condition, not including significant repairs or the need to install a new or replacement control. Routine maintenance is also required for specific conditions: (1) for perimeter controls, whenever sediment has accumulated to half or more the above-ground height of the control (CGP Part 2.2.3.c.i); (2) where sediment has been tracked-out from the site onto paved roads, sidewalks, or other paved areas (CGP Part 2.2.4.d); (3) for inlet protection measures, when sediment accumulates, the filter becomes clogged, and/or performance is compromised (CGP Part 2.2.10.b); and (4) for sediment basins, as necessary to maintain at least half of the design capacity of the basin (CGP Part 2.2.12.f)

<sup>2</sup> Corrective actions are triggered only for specific conditions (CGP Part 5.1):

1. A stormwater control needs a significant repair or a new or replacement control is needed, or, in accordance with Part 2.1.4.c, you find it necessary to repeatedly (i.e., three (3) or more times) conduct the same routine maintenance fix to the same control at the same location (unless you document in your inspection report under Part 4.7.1.c that the specific reoccurrence of this same problem should still be addressed as a routine maintenance fix under 2.1.4); or
2. A stormwater control necessary to comply with the requirements of this permit was never installed, or was installed incorrectly; or
3. Your discharges are not meeting applicable water quality standards; or
4. A prohibited discharge has occurred (see CGP Part 1.3); or
5. During the discharge from site dewatering activities:
  - a. The weekly average of your turbidity monitoring results exceeds the 50 NTU benchmark (or alternate benchmark if approved by EPA pursuant to Part 3.3.2.b); or
  - b. You observe or you are informed by EPA, State, or local authorities of the presence of the conditions specified in Part 4.6.3.e.

<sup>3</sup> If a condition on your site requires a corrective action, you must also fill out a corrective action log found at <https://www.epa.gov/npdes/construction-general-permit-resources-tools-and-templates>. See CGP Part 5.4 for more information.

Section C – Condition and Effectiveness of Pollution Prevention (P2) Practices and Controls (CGP Part 2.3)  
(Insert additional rows if needed)

| Type and Location of P2 Practices and Controls                                                                                                                                                                                                                                                                                                                                     | Conditions Requiring Routine Maintenance? <sup>1</sup>   | If “Yes,” How Many Times (Including This Occurrence) Has This Condition Been Identified? | Conditions Requiring Corrective Action? <sup>2, 3</sup>  | Date on Which Condition First Observed (If Applicable)? | Description of Conditions Observed |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|------------------------------------------------------------------------------------------|----------------------------------------------------------|---------------------------------------------------------|------------------------------------|
| 1.                                                                                                                                                                                                                                                                                                                                                                                 | <input type="checkbox"/> Yes <input type="checkbox"/> No |                                                                                          | <input type="checkbox"/> Yes <input type="checkbox"/> No |                                                         |                                    |
| 2.                                                                                                                                                                                                                                                                                                                                                                                 | <input type="checkbox"/> Yes <input type="checkbox"/> No |                                                                                          | <input type="checkbox"/> Yes <input type="checkbox"/> No |                                                         |                                    |
| 3.                                                                                                                                                                                                                                                                                                                                                                                 | <input type="checkbox"/> Yes <input type="checkbox"/> No |                                                                                          | <input type="checkbox"/> Yes <input type="checkbox"/> No |                                                         |                                    |
| 4.                                                                                                                                                                                                                                                                                                                                                                                 | <input type="checkbox"/> Yes <input type="checkbox"/> No |                                                                                          | <input type="checkbox"/> Yes <input type="checkbox"/> No |                                                         |                                    |
| 5.                                                                                                                                                                                                                                                                                                                                                                                 | <input type="checkbox"/> Yes <input type="checkbox"/> No |                                                                                          | <input type="checkbox"/> Yes <input type="checkbox"/> No |                                                         |                                    |
| <p>If the same routine maintenance was found to be necessary three or more times for the same control at the same location (including this occurrence), follow the corrective action requirements and record the required information in your corrective action log, or describe here why you believe the specific condition should still be addressed as routine maintenance:</p> |                                                          |                                                                                          |                                                          |                                                         |                                    |

| Section D – Stabilization of Exposed Soil (CGP Part 2.2.14)<br>(Insert additional rows if needed) |                                              |                                                                                           |                                                                                              |                                                          |       |
|---------------------------------------------------------------------------------------------------|----------------------------------------------|-------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|----------------------------------------------------------|-------|
| Specific Location That Has Been or Will Be Stabilized                                             | Stabilization Method and Applicable Deadline | Stabilization Initiated?<br><br>If "Yes," date initiated:                                 | Final Stabilization Criteria Met?<br><br>If "Yes," date criteria met:                        | Final Stabilization Photos Taken?                        | Notes |
| 1.                                                                                                |                                              | <input type="checkbox"/> Yes <input type="checkbox"/> No<br><br>If "Yes," date initiated: | <input type="checkbox"/> Yes <input type="checkbox"/> No<br><br>If "Yes," date criteria met: | <input type="checkbox"/> Yes <input type="checkbox"/> No |       |
| 2.                                                                                                |                                              | <input type="checkbox"/> Yes <input type="checkbox"/> No<br><br>If "Yes," date initiated: | <input type="checkbox"/> Yes <input type="checkbox"/> No<br><br>If "Yes," date criteria met: | <input type="checkbox"/> Yes <input type="checkbox"/> No |       |
| 3.                                                                                                |                                              | <input type="checkbox"/> Yes <input type="checkbox"/> No<br><br>If "Yes," date initiated: | <input type="checkbox"/> Yes <input type="checkbox"/> No<br><br>If "Yes," date criteria met: | <input type="checkbox"/> Yes <input type="checkbox"/> No |       |
| 4.                                                                                                |                                              | <input type="checkbox"/> Yes <input type="checkbox"/> No<br><br>If "Yes," date initiated: | <input type="checkbox"/> Yes <input type="checkbox"/> No<br><br>If "Yes," date criteria met: | <input type="checkbox"/> Yes <input type="checkbox"/> No |       |
| 5.                                                                                                |                                              | <input type="checkbox"/> Yes <input type="checkbox"/> No<br><br>If "Yes," date initiated: | <input type="checkbox"/> Yes <input type="checkbox"/> No<br><br>If "Yes," date criteria met: | <input type="checkbox"/> Yes <input type="checkbox"/> No |       |

## Section E – Description of Discharges (CGP Part 4.6.2)

(Insert additional rows if needed)

Was a discharge (not including dewatering) occurring from any part of your site at the time of the inspection?<sup>4</sup> ☐ Yes ☐ No

If “Yes,” for each point of discharge, document the following:

- The visual quality of the discharge.
- The characteristics of the discharge, including color; odor; floating, settled, or suspended solids; foam; oil sheen; and other indicators of stormwater pollutants.
- Signs of the above pollutant characteristics that are visible from your site and attributable to your discharge in receiving waters or in other constructed or natural site drainage features.

| Discharge Location | Observations |
|--------------------|--------------|
| 1.                 |              |
| 2.                 |              |
| 3.                 |              |
| 4.                 |              |
| 5.                 |              |

<sup>4</sup> If a dewatering discharge was occurring, you must conduct a dewatering inspection pursuant to CGP Part 4.3.2 and complete a separate dewatering inspection report.

## Section F – Signature and Certification (CGP Part 4.7.2)

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information contained therein. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information contained is, to the best of my knowledge and belief, true, accurate, and complete. I have no personal knowledge that the information submitted is other than true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

## MANDATORY: Signature of Operator or "Duly Authorized Representative:"

|               |              |
|---------------|--------------|
| Signature:    | Date:        |
| Printed Name: | Affiliation: |

|                                                    |              |
|----------------------------------------------------|--------------|
| OPTIONAL: Signature of Contractor or Subcontractor |              |
| Signature:                                         | Date:        |
| Printed Name:                                      | Affiliation: |

Stormwater Pollution Prevention Plan (SWPPP)  
Proposed Solar Energy Facility with Battery Storage – Fortuna

Appendix E – Copy of Corrective Action Log

## 2022 CGP Corrective Action Log

Project Name: Proposed Solar Energy Facility with Battery Storage - Fortuna

TPDES ID Number: \_\_\_\_\_

| Section A – Individual Completing this Log                                                                                                                                                                                                                                                                                                                                |                                    |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|
| Name:                                                                                                                                                                                                                                                                                                                                                                     | Title:                             |
| Company Name:                                                                                                                                                                                                                                                                                                                                                             | Email:                             |
| Address:                                                                                                                                                                                                                                                                                                                                                                  | Phone Number:                      |
| Section B – Details of the Problem (CGP Part 5.4.1.a)<br>Complete this section <u>within 24 hours</u> of discovering the condition that triggered corrective action.                                                                                                                                                                                                      |                                    |
| Date problem was first identified:                                                                                                                                                                                                                                                                                                                                        | Time problem was first identified: |
| What site conditions triggered this corrective action? <i>(Check the box that applies. See instructions for a description of each triggering condition (1 thru 6).)</i><br><input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5a <input type="checkbox"/> 5b <input type="checkbox"/> 6 |                                    |
| Specific location where problem identified:                                                                                                                                                                                                                                                                                                                               |                                    |
| Provide a description of the specific condition that triggered the need for corrective action and the cause (if identifiable):                                                                                                                                                                                                                                            |                                    |
| Section C – Corrective Action Completion (CGP Part 5.4.1.b)<br>Complete this section <u>within 24 hours</u> after completing the corrective action.                                                                                                                                                                                                                       |                                    |
| For site condition # 1, 2, 3, 4, or 6 (those not related to a dewatering discharge) confirm that you met the following deadlines (CGP Part 5.2.1):                                                                                                                                                                                                                        |                                    |
| <input type="checkbox"/> Immediately took all reasonable steps to address the condition, including cleaning up any contaminated surfaces so the material will not discharge in subsequent storm events. AND                                                                                                                                                               |                                    |
| <input type="checkbox"/> Completed corrective action by the close of the next business day, unless a new or replacement control, or significant repair, was required. OR                                                                                                                                                                                                  |                                    |
| <input type="checkbox"/> Completed corrective action within seven (7) calendar days from the time of discovery because a new or replacement control, or significant repair, was necessary to complete the installation of the new or modified control or complete the repair. OR                                                                                          |                                    |
| <input type="checkbox"/> It was infeasible to complete the installation or repair within 7 calendar days from the time of discovery. Provide the following additional information:<br><br>Explain why 7 calendar days was infeasible to complete the installation or repair:                                                                                              |                                    |

Provide your schedule for installing the stormwater control and making it operational as soon as feasible after the 7 calendar days:

For site condition # 5a, 5b, or 6 (those related to a dewatering discharge), confirm that you met the following deadlines:

- ☐ Immediately took all reasonable steps to minimize or prevent the discharge of pollutants until a solution could be implemented, including shutting off the dewatering discharge as soon as possible depending on the severity of the condition taking safety considerations into account.
- ☐ Determined whether the dewatering controls were operating effectively and whether they were causing the conditions.
- ☐ Made any necessary adjustments, repairs, or replacements to the dewatering controls to lower the turbidity levels below the benchmark or remove the visible plume or sheen.

| Describe any modification(s) made as part of corrective action:<br>(Insert additional rows below if applicable) | Date of completion: | SWPPP update necessary?                                  | If yes, date SWPPP was updated: |
|-----------------------------------------------------------------------------------------------------------------|---------------------|----------------------------------------------------------|---------------------------------|
| 1.                                                                                                              |                     | <input type="checkbox"/> Yes <input type="checkbox"/> No |                                 |
| 2.                                                                                                              |                     | <input type="checkbox"/> Yes <input type="checkbox"/> No |                                 |

**Section D - Signature and Certification (CGP Part 5.4.2)**

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information contained therein. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information contained is, to the best of my knowledge and belief, true, accurate, and complete. I have no personal knowledge that the information submitted is other than true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

**MANDATORY: Signature of Operator or "Duly Authorized Representative:"**

|               |              |
|---------------|--------------|
| Signature:    | Date:        |
| Printed Name: | Affiliation: |

**OPTIONAL: Signature of Contractor or Subcontractor**

|               |              |
|---------------|--------------|
| Signature:    | Date:        |
| Printed Name: | Affiliation: |

Stormwater Pollution Prevention Plan (SWPPP)  
Proposed Solar Energy Facility with Battery Storage – Fortuna

Appendix F –SWPPP Amendment Log

| No. | Description of the Amendment | Date of Amendment | Amendment Prepared by [Name(s) and Title] |
|-----|------------------------------|-------------------|-------------------------------------------|
|     |                              |                   |                                           |
|     |                              |                   |                                           |
|     |                              |                   |                                           |
|     |                              |                   |                                           |
|     |                              |                   |                                           |
|     |                              |                   |                                           |
|     |                              |                   |                                           |
|     |                              |                   |                                           |

Appendix G –Subcontractor Certifications/Agreements

SUBCONTRACTOR CERTIFICATION  
STORMWATER POLLUTION PREVENTION PLAN

Project Number: \_\_\_\_\_

Project Title: \_\_\_\_\_

Operator(s): \_\_\_\_\_

As a subcontractor, you are required to comply with the Stormwater Pollution Prevention Plan (SWPPP) for any work that you perform on-site. Any person or group who violates any condition of the SWPPP may be subject to substantial penalties or loss of contract. You are encouraged to advise each of your employees working on this project of the requirements of the SWPPP. A copy of the SWPPP is available for your review at the office trailer.

Each subcontractor engaged in activities at the construction site that could impact stormwater must be identified and sign the following certification statement:

Stormwater Pollution Prevention Plan (SWPPP)  
Proposed Solar Energy Facility with Battery Storage – Fortuna

I certify under the penalty of law that I have read and understand the terms and conditions of the SWPPP for the above designated project and agree to follow the practices described in the SWPPP.

This certification is hereby signed in reference to the above named project:

Company: \_\_\_\_\_

Address: \_\_\_\_\_

Telephone Number: \_\_\_\_\_

Type of construction service to be provided: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Signature: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

Stormwater Pollution Prevention Plan (SWPPP)  
Proposed Solar Energy Facility with Battery Storage – Fortuna

## Appendix H – Grading and Stabilization Activities Log

[illegible]

Stormwater Pollution Prevention Plan (SWPPP)  
Proposed Solar Energy Facility with Battery Storage – Fortuna

Appendix I –Training Documentation

Stormwater Pollution Prevention Plan (SWPPP)  
Proposed Solar Energy Facility with Battery Storage – Fortuna

Appendix J – Delegation of Authority Form

Delegation of Authority

I, \_\_\_\_\_ (name), hereby designate the person or specifically described position below to be a duly authorized representative for the purpose of overseeing compliance with environmental requirements, including the EPA's Construction General Permit (CGP), at the \_\_\_\_\_ construction site. The designee is authorized to sign any reports, stormwater pollution prevention plans and all other documents required by the permit.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

(name of person or position)  
(company)  
(address)  
(city, State, zip)  
(phone)

By signing this authorization, I confirm that I meet the requirements to make such a designation as set forth in Appendix G of EPA's CGP, and that the designee above meets the definition of a "duly authorized representative" as set forth in Appendix G.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I have no personal knowledge that the information submitted is other than true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name: \_\_\_\_\_

Company: \_\_\_\_\_

Title: \_\_\_\_\_

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Stormwater Pollution Prevention Plan (SWPPP)  
Proposed Solar Energy Facility with Battery Storage – Fortuna

Appendix K – Endangered Species Documentation

A copy of the Flora & Fauna Study and Marine Study are included in this Coastal Zone Management Permit Application.

Stormwater Pollution Prevention Plan (SWPPP)  
Proposed Solar Energy Facility with Battery Storage – Fortuna

Appendix L – Historic Properties Documentation

[Consultant on board to prepare documentation meeting DPNR standards.](#)

Stormwater Pollution Prevention Plan (SWPPP)  
Proposed Solar Energy Facility with Battery Storage – Fortuna

Appendix M – Rainfall Gauge Recording

Use the table below to record the rainfall gauge readings at the beginning and end of each work day. An example table follows.

| Month/Year |            |          | Month/Year |            |          | Month/Year |            |          |
|------------|------------|----------|------------|------------|----------|------------|------------|----------|
| Day        | Start time | End time | Day        | Start time | End time | Day        | Start time | End time |
| 1          |            |          | 1          |            |          | 1          |            |          |
| 2          |            |          | 2          |            |          | 2          |            |          |
| 3          |            |          | 3          |            |          | 3          |            |          |
| 4          |            |          | 4          |            |          | 4          |            |          |
| 5          |            |          | 5          |            |          | 5          |            |          |
| 6          |            |          | 6          |            |          | 6          |            |          |
| 7          |            |          | 7          |            |          | 7          |            |          |
| 8          |            |          | 8          |            |          | 8          |            |          |
| 9          |            |          | 9          |            |          | 9          |            |          |
| 10         |            |          | 10         |            |          | 10         |            |          |
| 11         |            |          | 11         |            |          | 11         |            |          |
| 12         |            |          | 12         |            |          | 12         |            |          |
| 13         |            |          | 13         |            |          | 13         |            |          |
| 14         |            |          | 14         |            |          | 14         |            |          |
| 15         |            |          | 15         |            |          | 15         |            |          |
| 16         |            |          | 16         |            |          | 16         |            |          |
| 17         |            |          | 17         |            |          | 17         |            |          |
| 18         |            |          | 18         |            |          | 18         |            |          |
| 19         |            |          | 19         |            |          | 19         |            |          |
| 20         |            |          | 20         |            |          | 20         |            |          |
| 21         |            |          | 21         |            |          | 21         |            |          |
| 22         |            |          | 22         |            |          | 22         |            |          |
| 23         |            |          | 23         |            |          | 23         |            |          |
| 24         |            |          | 24         |            |          | 24         |            |          |
| 25         |            |          | 25         |            |          | 25         |            |          |
| 26         |            |          | 26         |            |          | 26         |            |          |
| 27         |            |          | 27         |            |          | 27         |            |          |
| 28         |            |          | 28         |            |          | 28         |            |          |
| 29         |            |          | 29         |            |          | 29         |            |          |
| 30         |            |          | 30         |            |          | 30         |            |          |
| 31         |            |          | 31         |            |          | 31         |            |          |

Stormwater Pollution Prevention Plan (SWPPP)  
Proposed Solar Energy Facility with Battery Storage – Fortuna

Appendix N – Turbidity Monitoring Sampling Documentation

Not anticipated for this project

## Attachment D – Flora & Fauna Study





## **Flora & Fauna Survey**

Fortuna – Plot 2 & 3B

St. Thomas, US Virgin Islands

Prepared for:

**Caritech Group, LLC**

125 Cotton Valley

PO Box 5018

St. Croix, VI 00851

Prepared by:

**Amber Packard, MSc**

8124 Subbase STE 102

PMB 486

St. Thomas, VI 00802

25 February 2025

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## Introduction and Methods

In preparation for the installation of a solar field on Plots 2 and 3B in Fortuna, St. Thomas, US Virgin Islands, a flora and fauna survey was conducted to document the pre-existing plant and animal communities. The two plots (Figure 3) share a boarder and will collectively be referred to as “the property”, where appropriate.

The property is a large, uninterrupted piece of land on the southern shore of the western part of St. Thomas, approximately 3 miles west of the St. Thomas airport. The proposed solar field will lie on the northern portion of the property and straddle both properties equally, taking up about 70 acres of the 204 acres of land (Figure 3).

Between January 24<sup>th</sup> and February 22<sup>nd</sup>, local biologists bushwhacked through Plot 2 and 3B to document the habitat zones and document species encountered. Biologists also walked along the roadway that delineates the northern boarder of the property. Routes surveyed were recorded via iPhone using a trail mapping application ([www.gaiagps.com](http://www.gaiagps.com)) and a Garmin GPS. Approximately 45 hours were spent conducting surveys by foot. Surveyors also documented the habitat from a boat, using binoculars to identify species and habitat attributes. To reach the inaccessible southern shore and southeastern point of Plot 2, surveyors anchored a boat nearby, swam to shore, and proceeded to bushwhack from there.

To ensure that cryptic and skittish animal species were documented, biologists chose various locations to sit quietly for at least 15 minutes to observe wildlife. During this time, we also listened for bird calls and used the Cornell University Ornithology Lab iPhone application to identify bird song ([merlin.allaboutbirds.org](http://merlin.allaboutbirds.org)).



*Figure 1. The property, photographed from the south by boat. The notch in the center of the upper ridge is where the land clearing crew entered the property.*

General habitats and communities were photographed and species were recorded and categorized. Due to the season and the dry weather during the survey, very few plants were flowering, making positive identification to species difficult. Where necessary, we identified plants to the lowest taxonomic level possible.



Figure 2. Watersheds intersected by the proposed project property

Since significant land clearing is proposed, watershed implications are of critical importance. The proposed solar field will primarily impact the Fortuna watershed on the southwest of the island of St. Thomas, although the property does include small sections of two other watersheds, Perseverance and Botany Bay (Figure 2).

## Results and Discussion

### General observations

There was significant overlap in the species encountered in both plots. For a complete species list and the plots they were observed in, see **Appendix A**.

Plot 2, the eastern of the two plots, covers approximately 120 acres of sloping forest and rocky bush. This plot is dominated by semi-deciduous forest and forest shrub in the upland areas, sloping into dry, mixed forest and shrubland towards the southern coastal boarder. Along the eastern shoreline, beach forest species were found from the shoreline to approximately 200ft from the high-water mark.

Plot 3B, the western of the two plots, covers approximately 84 acres and consists of similar dry forest and rocky bush. A similar band of dry shrubland runs along the coastline.

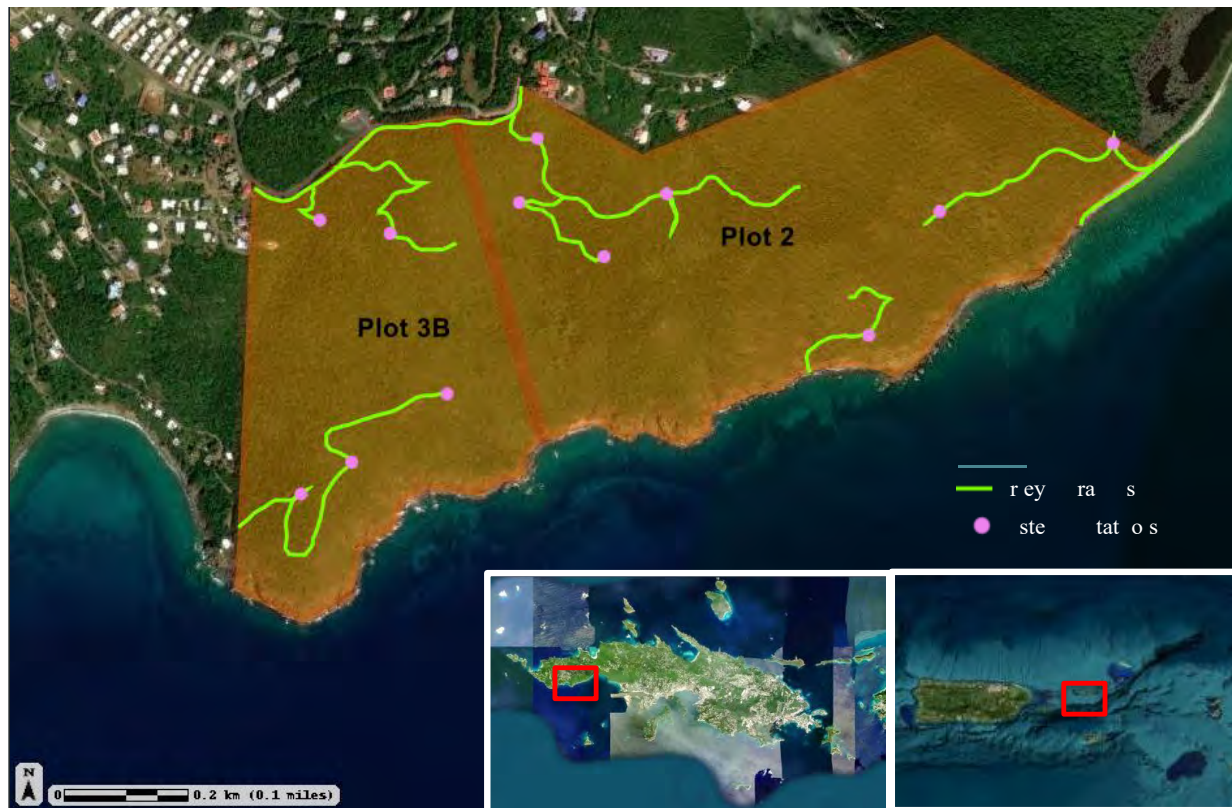


Figure 3. Map of Plot 2 and 3B **A.** Greater Caribbean region with St. Thomas indicated with a red box **B.** The location of the property on St. Thomas, USVI **C.** Plot 2 and 3B with smoothed survey tracks and listening stations indicated.

## Semi-deciduous forest and shrub habitat

Above 200ft in elevation, the property is dominated by semi-deciduous forest and shrub habitat. Small trees formed a dense forest with relatively low diversity. Most trees are less than 50 inches Diameter at Breast Height (DBH), indicating that this property has been recently disturbed by agriculture or grazing practices. Trees over 100 inches DBH were encountered in the eastern third of Plot 2, in the Perseverance Bay watershed. The understory was overwhelmingly wild pineapple, century plant, goatbush, and broom palm (Figure 4).

This type of habitat traditionally occurs in loose, fast-draining soils. Soils throughout this portion of the property were crumbly, dry clay. The species assemblage and tree age/size indicate that this property was likely used for agriculture or livestock grazing.



Figure 4. Common ground cover in the property A. Century plant B. Wild pineapple C. Broom palm



Figure 5. Common trees found in the property A. Bay rum B. Casha C. Water mampoo D. Gumbo limbo E. *P. aculeata* F. Wild coffee



Figure 6. Common herbaceous plants found on the property **A.** Cat and claw **B.** Velvet nightshade **C.** Hornbeam leaved melochia **D.** Wild frangipani **E.** Sweet lime **F.** Sea torchwood



Figure 7. Animals observed in Upland dry forest habitat **A.** Hermit crab **B.** Indian mongoose **C.** Puerto Rican anole **D.** Crested anole **E.** Footprint of a White tailed deer **F.** More evidence of deer

## Dry coastal scrub habitat

A small band of coastal habitat exhibits properties of dry coastal scrubland. This zone is dominated by various cactus species, gumbo limbo, tan tan, and small drought-resistant shrubs. The rocky, steep slopes drain water quickly so drought resistant plants and cacti thrive. The cliffs descending to the water are used by marine birds. We observed brown boobies using these cliffs as resting places.



*Figure 8. Coastal scrubland A. Plant community of the steep, dry scrubland B. Pipe organ cactus C. Tan tan and jackswitch*

## Beach forest habitat

The eastern most section of coastline runs along Perseverance Bay and is comprised of coral rubble and beach vines (Figure 9a). The rubbly nature of the beach is not conducive to sand-laying sea turtles (Green, Loggerhead, and Leatherback sea turtles) but could be utilized by Hawksbill sea turtles. Upon investigation, surveyors found no evidence of sea turtle nesting activities.



Figure 9. A. The beach habitat in Perseverance Bay, photographed facing westward from the eastern most point of the property  
 B. Typical understory of the beach forest C. Beach pea vines D. Noni tree. E. Beach cabbage

## Mangrove habitat

A small portion of the southeast tip of Plot 2 has Red Mangroves (*Rhizophora mangle*), near the property's approach to the Perseverance Bay Salt Pond (Figure 10). The mangroves in this salt pond area appear healthy and support a species assemblage typical of St. Thomas mangrove habitat. The current survey only includes species encountered within the boundary of the property, but land usage decisions will impact this salt pond mangrove habitat as well.



Figure 10. Mangrove habitat **A.** Red mangrove trees **B.** View of the Perseverance Bay Salt Pond from the property **C.** Fiddler crab **D.** Blue land crab carapace

## Protected Species

No endangered or protected animals were encountered during the terrestrial surveys but one area in the southwest portion of Plot 3B was identified as suitable bat habitat, with a small but accessible cave system and travel corridors. This area is indicated on Figure 11 and is outside the proposed development zone.

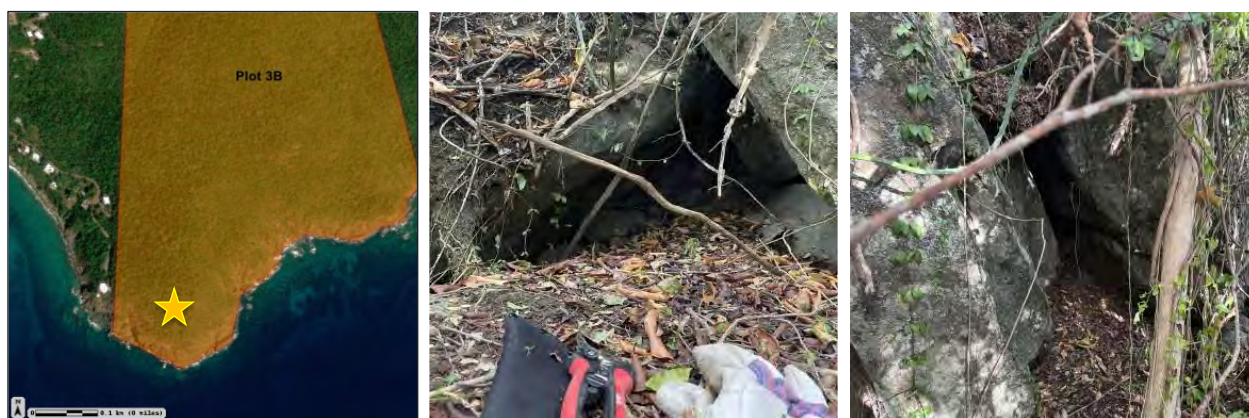


Figure 11. Small caves were found in the southwest portion of Plot 3B, indicated on the map.

While not federally protected, Red Mangroves (*R. mangle*) are protected under the USVI Endangered and Indigenous Species Act. Red Mangrove trees surround the Perseverance Bay Salt Pond and are found on a small portion of Plot 2.



Figure 12. Bird species observed A. Pearly eyed thrasher B. Brown boobys resting on cliffs C. Bananaquit

## Recommendations

The slope and size of the proposed clearing will impact how stormwater flows through the property. I recommend a storm-water management plan be implemented immediately upon project development, before any storms occur.

Goat grazing is a low-cost method of weed and undergrowth management. If goats are used for grazing, they should be contained within the project site and care should be taken to limit the amount of waste that is transported into any minor gullies. Overgrazing can cause destabilization of root structures that hold soils in place and care should be taken to avoid overgrazing.

Salt ponds and mangrove stands are sensitive habitat and are relied upon by protected species. If land clearing stays inside the Fortuna watershed, there should be no impact to the salt pond or mangroves in the Perseverance watershed. The proposed solar field does not cross into the Perseverance watershed. We recommend that all land clearing and construction stay at least 100m from the Perseverance watershed delineation to ensure no negative impacts on the sensitive salt pond and mangrove system.

Local partners are willing and eager to assist with conservation efforts. Partnering with local groups will alleviate any costs associated with maintaining the health of the undisturbed portions of Plots 2 and 3B and will help garner public support for this type of construction in the future. We recommend exploring a partnership with the University of the Virgin Islands or the newly formed Territorial Parks and Protected Areas Division. If you'd like to explore those partnerships, I would be happy to facilitate.

## Appendix A. Species list

Table 1. List of plant species encountered in Plots 2 and 3B

| Flora          |               |                                   |                    |               |              |
|----------------|---------------|-----------------------------------|--------------------|---------------|--------------|
| <u>Order</u>   | <u>Family</u> | <u>Species</u>                    | <u>Common Name</u> | <u>Status</u> | <u>Plots</u> |
| Arecales       | Arecaceae     | <i>Coccothrinax alta</i>          | Broom palm         | native        | 2&3B         |
|                |               | <i>Cocos nucifera</i>             | Coconut palm       | naturalized   | 2            |
| Asparagales    | Asparagaceae  | <i>Agave americana</i>            | Century plant      | naturalized   | 2&3B         |
| Asterids       | Asterales     | <i>Scaevola spp.</i>              | Beach cabbage      | native        | 2            |
| Boraginales    | Boraginaceae  | <i>Boussieria succulenta</i>      | Poisonberry/cherry | native        | 2            |
| Brassicales    | Capparaceae   | <i>Capparis cynophallophora</i>   | Jamaican caper     | native        | 2&3B         |
| Caryophyllales | Polygonaceae  | <i>Coccoloba uvifera</i>          | Seagrape           | native        | 2            |
|                |               | <i>Coccoloba diversifolia</i>     | Pigeon plum        | native        | 2&3B         |
|                | Cactaceae     | <i>Melocactus intortus</i>        | Turks cap          | naturalized   | 2&3B         |
|                |               | <i>Hylocereus trigonus</i>        | Chicknet           |               | 2&3B         |
|                |               | <i>Opuntia repens</i>             | Suckers            |               | 2            |
|                |               | <i>Opuntia rubescens</i>          | Roadkill cactus    |               | 2            |
|                |               | <i>Pilosocereus royerii</i>       | Pipe organ         |               | 2&3B         |
|                |               | <i>Opuntia dillenii</i>           | Prickly pear       | native        | 2            |
|                |               | <i>Pisonia subcordata</i>         | Water mampoo       | native        | 2&3B         |
|                | Nyctaginaceae |                                   |                    |               |              |
| Ericales       | Primulaceae   | <i>Jacquinia arborea</i>          | Torchwood          | native        | 2&3B         |
|                | Sapotaceae    | <i>Sideroxylon foetidissimum</i>  | Yellow mastic      | native        | 2&3B         |
| Fabales        | Fabaceae      | <i>Acacia retusa</i>              | Catch and Keep     |               | 2&3B         |
|                |               | <i>Pithecellobium unguis-cati</i> | Cats Claw          |               | 2&3B         |
|                |               | <i>Leucaena leucocephala</i>      | Tan tan            | naturalized   | 2&3B         |
|                |               | <i>Delonix regia</i>              | Flamboyant         | native        | 2            |
|                |               | <i>Acacia macracantha</i>         | Casha              | native        | 2&3B         |
|                |               | <i>Canavalia rosea</i>            | Bay bean           |               | 2            |
|                |               | <i>Albizia lebbek</i>             | Rattlebush         | naturalized   | 2&3B         |
|                |               | <i>Pictetia aculeata</i>          |                    | native        | 2&3B         |
| Gentianales    | Apocynaceae   | <i>Cryptostegia grandiflora</i>   | Rubber vine        | naturalized   | 2&3B         |
|                |               | <i>Plumeria alba</i>              | Wild frangipani    | native        | 2&3B         |
|                | Rubiaceae     | <i>Morinda citrifolia</i>         | Noni               | naturalized   | 2            |
| Lamiales       | Bignoniaceae  | <i>Tecoma stans</i>               | Ginger Thomas      | native        | 2&3B         |
|                |               | <i>Crescentia cujete</i>          | Calabash           | native        | 2&3B         |
|                | Vervaceae     | <i>Citharexylum fruticosum</i>    | Fiddlewood         | native        | 2&3B         |

|              |                |                              |                             |                      |           |
|--------------|----------------|------------------------------|-----------------------------|----------------------|-----------|
| Poales       | Poaceae        | <i>Megathyrsus maximus</i>   | Guinea grass                | invasive             | 2&3B      |
|              |                | <i>Cynodon dactylon</i>      | Burmuda grass               | non-native           | 2&3B      |
|              | Bromeliaceae   | <i>Tillandsia utriculata</i> | Wild pine                   | native               | 2&3B      |
|              |                | <i>Bromilia pinguin</i>      | Pinguin                     | native               | 2&3B      |
|              |                | <i>Neoregelia spp.</i>       | Bromeliad species           |                      | 2&3B      |
| Malpighiales | Rhizophoraceae | <i>Rhizophora mangle</i>     | Red mangrove                | native,<br>protected | 2         |
|              | Salicaceae     | <i>Casearia dodecandra</i>   |                             | native               | 3B        |
|              |                | <i>Casearia guianensis</i>   | Wild coffee                 | native               | 2&3B      |
|              | Euphorbiaceae  | <i>Croton astroites</i>      | Wild marang                 | native               | 2&3B      |
| Malvales     | Malvaceae      | <i>Thespecia populnea</i>    | Beach maho                  | naturalized          | 2         |
|              |                | <i>Melochia nodiflora</i>    | Hornbeam leaved<br>melochia | native               | 2&3B      |
|              |                | <i>Corchorus hirsutus</i>    | Jack switch                 | native               | 2&3B      |
|              |                | <i>Guazuma ulmiflora</i>     | West Indian elm             | native               | 2&3B      |
|              |                | <i>Abutilon spp.</i>         |                             |                      |           |
| Myrtales     | Myrtaceae      | <i>Pimenta racemosa</i>      | Bay rum                     | native               | 2&3       |
| Rosales      | Rhamnaceae     | <i>Colubrina elliptica</i>   | Soldierwood                 | native               | 2&3       |
| Sapindales   | Simaroubaccae  | <i>Castela erecta</i>        | Goatbush                    |                      | 2 &<br>3B |
|              | Burseraceae    | <i>Bursera simaruba</i>      | Gumbo limbo                 | native               | 2&3       |
|              | Rutaceae       | <i>Amyris elemifera</i>      | Sea torchwood               | native               | 2&3       |
|              |                | <i>Triphasia trifolia</i>    | Limeberry                   | introduced           | 2&3B      |
|              | Sapindaceae    | <i>Melicoccus bijugatus</i>  | Genip                       | naturalized          | 3B        |
|              | Meliaceae      | <i>Azadirachta indica</i>    | Neem                        | native               | 2&3B      |
| Solanales    | Solanaceae     | <i>Solanum erianthum</i>     | Velvet nightshade           | introduced           | 3B        |

Table 2. List of animal species encountered in Plots 2 and 3B

| Fauna                      |                               |                         |                       |              |
|----------------------------|-------------------------------|-------------------------|-----------------------|--------------|
| <u>Family</u>              | <u>Species</u>                | <u>Common Name</u>      | <u>Status</u>         | <u>Plots</u> |
| <b>Reptiles (Reptilia)</b> |                               |                         |                       |              |
| Dactyloidae                | <i>Anolis cristatellus</i>    | Crested anole           | native, not protected | 2 & 3B       |
|                            | <i>Anolis stratulus</i>       | Banded anole            | native, not protected | 2 & 3B       |
|                            | <i>Anolis pulchellus</i>      | Puerto Rican anole      | native, not protected | 2 & 3B       |
| <b>Mammals (Mammalia)</b>  |                               |                         |                       |              |
| Herpestidae                | <i>Urva auropunctata</i>      | Indian mongoose         | introduced, invasive  | 2            |
| Cervidae                   | <i>Odocoileus virginianus</i> | Whitetail deer          | introduced            | 2 & 3B       |
| <b>Birds (Aves)</b>        |                               |                         |                       |              |
| Sulidae                    | <i>Sula leucogaster</i>       | Brown booby             | common                | 2            |
| Trochilidae                | <i>Orthorhyncus cristatus</i> | Crested hummingbird     | common                | 3B           |
| Mimidae                    | <i>Margarops fuscatus</i>     | Pearly-eyed thrasher    | common                | 2 & 3B       |
| Thraupidae                 | <i>Coereba flaveola</i>       | Bananaquit              | common                | 2 & 3B       |
| Tyrannidae                 | <i>Tyrannus dominicensis</i>  | Grey kingbird           | common                | 3B           |
| Cuculidae                  | <i>Coccyzus minor</i>         | Mangrove cuckoo         | common                | 2            |
| Columbidae                 | <i>Columbina passerina</i>    | Common ground dove      | common                | 2 & 3B       |
| <b>Invertebrates</b>       |                               |                         |                       |              |
| Gecarcinidae               | <i>Cardisoma guanhumi</i>     | Land crab               | common                | 2            |
| Ocypodidae                 | <i>Minuca burgersi</i>        | Fiddler crab            | common                | 2            |
| Coenobitidae               | <i>Coenobita clypeatus</i>    | Hermit crab             | common                | 2 & 3B       |
| Salticidae                 | <i>Compsodecta spp.</i>       | Adorable jumping spider | common                | 2 & 3B       |

## Attachment E – Marine Study





**Marine Study**  
Fortuna – Plots 2 & 3B  
St. Thomas, US Virgin Islands

Prepared for:

**Caritech Group, LLC**  
125 Cotton Valley PO Box 5018  
Kingshill, St. Croix, VI 00851

Prepared by:

**Amber Packard, MSc**  
8124 Subbase STE 102  
PMB 486  
St. Thomas, VI 00802

25 February 2025

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## Introduction and Methods

In preparation for the installation of a solar field on Plots 2 and 3B in Fortuna, St. Thomas, US Virgin Islands, a marine survey was conducted to document the pre-existing environmental conditions and benthic habitat.

Surveys of benthos and associated community were conducted by local biologists via snorkel and SCUBA (Figure 1). Surveys were conducted between January 24<sup>th</sup> and February 22<sup>nd</sup>. Benthic habitat was identified and mapped. A species list was constructed and photos were taken, with emphasis on rare, protected, or economically relevant species.

Water quality metrics were measured using a YSI EXO2 at ten stations (Figure 2) on February 21, 2025. At the same time, grab samples were collected at 5 sites for the common bacterial indicators: Total Coliforms, *Eschericia coli*, and *Enterococci spp.* Grab samples were also collected for Total Suspended Solids (TSS). Two long-standing water quality monitoring sites exist on either side of the coastline, STT-8 to the west in Fortuna Bay and STT-7B in Perseverance Bay to the east (Figure 2).

These sites are monitored quarterly by the Environmental Protection Agency and data are publicly available via the National Water Quality Monitoring Council portal, found here:

<https://www.waterqualitydata.us/#countrycode=US&statecode=US%3A78&siteType=Ocean&imeType=csv&sorted=no&providers=NWIS&providers=STORET> . To maintain data conformity, the same protocol was used for the water quality sampling in this study. *In situ* water



Figure 1. Local marine biologists surveyed and documented coral species along the coastal marine environment of the property.

quality metrics were collected at 0.5m depth and at 0.5m above the benthos, recording temperature, salinity, dissolved oxygen, pH, and turbidity.



Figure 2. Plots 2 and 3B with sampling site F01-10, sampled for the current study, and sites STT-7B and 8, sampled quarterly by the US EPA.

Table 1. GPS locations for marine sampling.

| Site ID | Latitude | Longitude | Samples collected                            |
|---------|----------|-----------|----------------------------------------------|
| F01     | 18.34208 | -65.01158 | <i>In situ</i> measurements only             |
| F02     | 18.34351 | -65.00977 | Grab samples and <i>in situ</i> measurements |
| F03     | 18.34404 | -65.00799 | <i>In situ</i> measurements only             |
| F04     | 18.34481 | -65.00717 | Grab samples and <i>in situ</i> measurements |
| F05     | 18.34475 | -65.00504 | <i>In situ</i> measurements only             |
| F06     | 18.34534 | -65.00375 | Grab samples and <i>in situ</i> measurements |
| F07     | 18.34581 | -65.00251 | <i>In situ</i> measurements only             |
| F08     | 18.34626 | -65.00060 | Grab samples and <i>in situ</i> measurements |
| F09     | 18.34734 | -64.99880 | <i>In situ</i> measurements only             |
| F10     | 18.34862 | -64.99737 | Grab samples and <i>in situ</i> measurements |

The proposed solar field will primarily impact the Fortuna watershed on the southwest of the island of St. Thomas, although the property does include small sections of two other watersheds (Figure 3).



Figure 3. Watershed delineations overlaid on the proposed project property.

## Results and Discussion

### General observations

The coastline along Plot 2 and 3B is primarily steep, rocky slopes ending with large, bouldering outcroppings (Figure 4). The in-water surveys identified three distinct marine zones: inshore rubble, intact nearshore coral reef, and invasive-dominated seagrass bed.

### Inshore rubble

A mix of terrigenous rock and coral rubble over limestone pavement dominate the nearshore environment from the water's edge to about 3-5m depth (Figure 5).

Covered in macroalgae and fine sediments, species here represent a traditional shallow marine community, with abundant juvenile damselfish, urchins, and other small invertebrates.



Figure 4. Cliffs and rocky outcroppings dominated the shoreline.



Figure 5. **A.** Rubble and macroalgae covered pavement, typical of the nearshore environment. **B.** Living *A. palmata* colony encountered neashore. **C.** Sargent Major damselfish and *Diadema annularus* inhabiting crevices in nearshore rubble.

## Nearshore coral reef

At about 4m depth (10 to 30m from the shoreline), the benthos became primarily a complex *Orbecella* dominated reef with large amounts of *Dictyota* and *Lobophora* macro-algae covering dead reef skeleton. This zone has about ~10-15% living coral. *Ramicrosta* and crustose coralline algae (CCA) are also common on coral reef skeleton. Only two living *Acropora palmata* colonies were encountered although recently dead colonies were abundant, indicating that this is a suitable habitat for the species. This well-developed reef descends to approximately 12m, where it meets sandy seagrass beds. The reef runs parallel to the entire surveyed coastline in fingers and patches, extending seaward approximately 50 to 150m from shore.

This coral reef supports a thriving faunal community, with almost every common reef fish species encountered. Herbivorous species like *Acanthurus spp*, *Stegastes spp*, and parrotfishes were abundant as well as predatory species like Jacks, Snappers, and Grouper. Additionally, a robust invertebrate community was observed (Figure 6) with many large, breeding-sized spiny lobsters hiding in crevices.

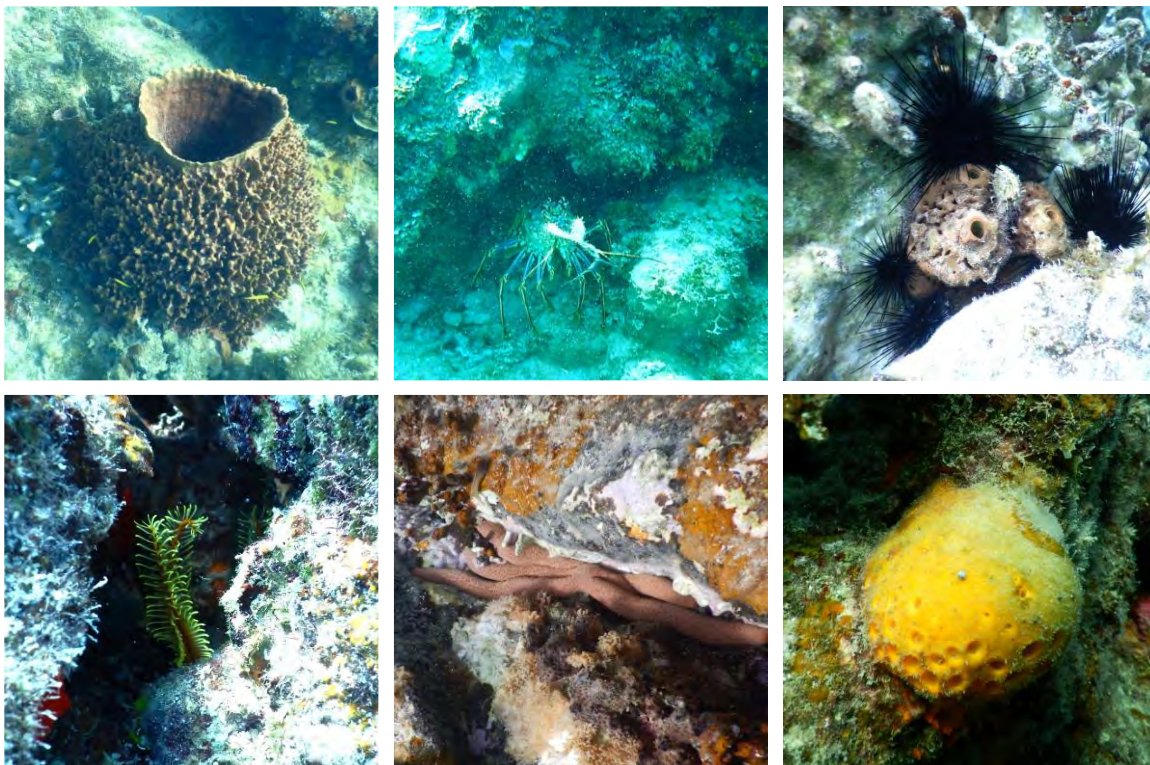


Figure 6. Invertebrate community found in nearshore reef **A.** Large barrel sponge **B.** Spiny lobster **C.** *Diadema annularus* on sponge **D.** Golden crinoid **E.** Common Comet Seastar **F.** Orange ball sponge

## Seagrass bed

Coral reef slopes into *Halophila* spp. dominated seagrass beds at about 12m depth, extending further than the current survey. This habitat supported small, grazing fish and various sponge species.

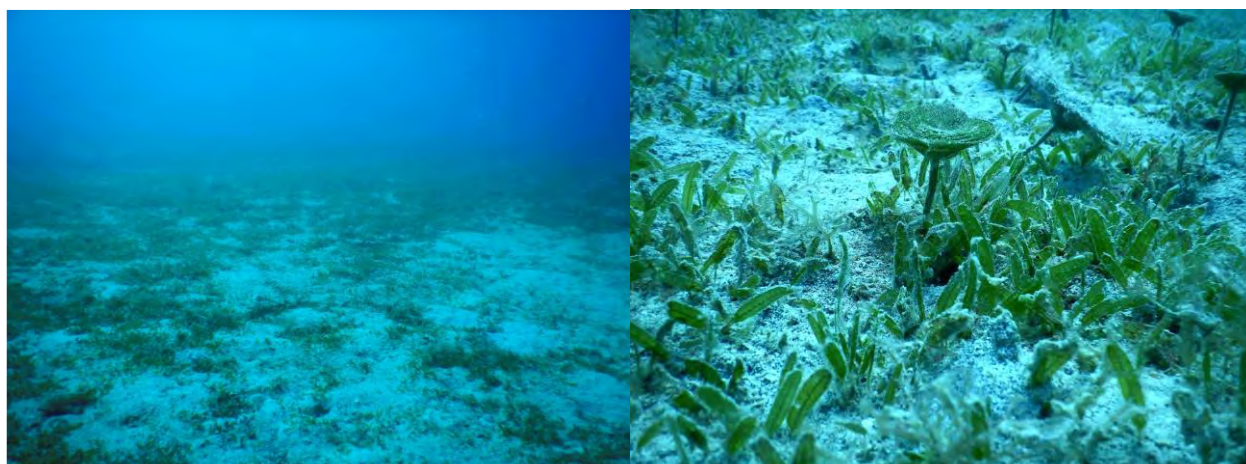


Figure 7. **A.** *Halophila* dominated seagrass bed. **B.** Flat-topped bristle brush among *Halophila* blades.

## Protected Species

Notable encounters of protected species include two Nassau grouper, and one Hawksbill Sea Turtle (Figure 8.).

Two living colonies of federally protected Elkhorn coral (*Acropora palmata*) were encountered, along with many recently dead skeletons (Figure 8). Critically endangered *Diploria labyrinthiformis* was also encountered, along with several colonies of the endangered *Orbecella annularis*, *O. faveolata*, and *O. franksi* (Figure 8).

For a full species list, see **Appendix A**.



Figure 8. **A.** Critically endangered Nassau Grouper **B.** Critically endangered Hawksbill turtle, grazing on a sponge. **C.** *O. annularis* and diverse fish community **D.** Recently dead *A. palmata* skeletons are abundant **E.** Endangered *D. labyrinthiformis* **F.** Princess parrotfish

## Water quality

Water quality metrics were within expected range for the season and weather conditions. Measurements for temperature, salinity, dissolved oxygen (DO), and turbidity can be found in Table 2. Notably, turbidity was extremely low, which indicates little to no input of terrigenous sedimentation in the week prior to sampling.

Table 2. In situ water quality measurements taken at all ten sites on February 21, 2025 with EXO2 multiparameter sonde.

| Site ID | Time  | Site depth (m) | Sample depth (m) | Temp (C) | Salinity (ppt) | DO (mg/L) | pH (s.u.) | Turbidity (NTU) |
|---------|-------|----------------|------------------|----------|----------------|-----------|-----------|-----------------|
| F01     | 16:49 | 11.8           | 0.5              | 26.97    | 36.58          | 7.16      | 8.20      | 0.0             |
|         |       |                | 11.3             | 26.90    | 36.59          | 7.01      | 8.19      | 0.3             |
| F02     | 16:45 | 6.5            | 0.5              | 27.07    | 36.59          | 7.05      | 8.20      | 0.0             |
|         |       |                | 6.0              | 26.98    | 36.59          | 6.97      | 8.19      | 0.0             |
| F03     | 16:42 | 6.3            | 0.5              | 27.21    | 36.60          | 7.20      | 8.20      | 0.0             |
|         |       |                | 5.8              | 26.88    | 36.59          | 7.10      | 8.20      | 0.0             |
| F04     | 16:40 | 4.5            | 0.5              | 27.38    | 36.60          | 7.23      | 8.22      | 0.0             |
|         |       |                | 4.0              | 27.10    | 36.59          | 7.70      | 8.22      | 0.0             |
| F05     | 16:36 | 6.8            | 0.5              | 27.26    | 36.60          | 7.35      | 8.21      | 0.0             |
|         |       |                | 6.3              | 26.86    | 36.59          | 7.12      | 8.19      | 0.0             |
| F06     | 16:33 | 6.7            | 0.5              | 26.90    | 36.58          | 7.22      | 8.21      | 0.0             |
|         |       |                | 6.2              | 26.80    | 36.59          | 7.17      | 8.20      | 0.0             |
| F07     | 16:30 | 5.3            | 0.5              | 27.05    | 36.58          | 7.27      | 8.21      | 0.0             |
|         |       |                | 4.8              | 26.92    | 36.58          | 7.30      | 8.21      | 0.0             |
| F08     | 16:24 | 6.6            | 0.5              | 27.10    | 36.60          | 7.00      | 8.19      | 0.0             |
|         |       |                | 6.1              | 26.38    | 36.60          | 6.93      | 8.19      | 0.0             |
| F09     | 16:21 | 5.4            | 0.5              | 27.01    | 36.59          | 7.08      | 8.20      | 0.0             |
|         |       |                | 4.9              | 26.88    | 36.59          | 6.99      | 8.19      | 0.0             |
| F10     | 16:15 | 3.4            | 0.5              | 27.57    | 36.50          | 7.89      | 8.04      | 0.0             |
|         |       |                | 2.9              | 27.03    | 36.58          | 7.25      | 8.17      | 0.0             |

Bacterial loads for Total Coliforms and *E. coli* show a gradient, moving from lower in the west to higher in the east. Due to high wave action, resuspension of sediment may have contributed to higher than expected values for these indicators. *Enterococci sp.* were below detectable limits for all samples.

Table 3. Results of grab sample laboratory analysis for bacterial indicators and Total Suspended Solids (TSS)

| Site ID | Total Coliforms (MPN) | <i>E. coli</i> (MPN) | Enterococci sp. (MPN) | TSS (mg/L) |
|---------|-----------------------|----------------------|-----------------------|------------|
| F02     | 573                   | 30                   | <10                   | 1.2        |
| F04     | 1467                  | 187                  | <10                   | 1.7        |
| F06     | 857                   | 122                  | <10                   | 1.9        |
| F08     | 1607                  | 332                  | <10                   | 3.2        |
| F10     | 1726                  | 281                  | <10                   | 2.1        |

Overall, the marine ecosystem supports a healthy assemblage of corals, fishes, and invertebrates.

## Recommendations

Due to the relative health of this reef and vulnerability of the coral globally, significant attention should be paid to limiting the introduction of additional stressors.

The solar field will rest primarily on the northern, upslope portion of these properties, leaving natural habitat as a buffer between the proposed construction site and the sea. I recommend that this area remain intact to preserve its ecological functionality.

The utmost care should be taken to protect this environment from sedimentation and disruption, especially during the land clearing and construction phases of the project. Silt and sediment barriers should be **properly** installed and maintained. Water quality, including turbidity and chlorophyll should be monitored throughout the construction phase of the project.

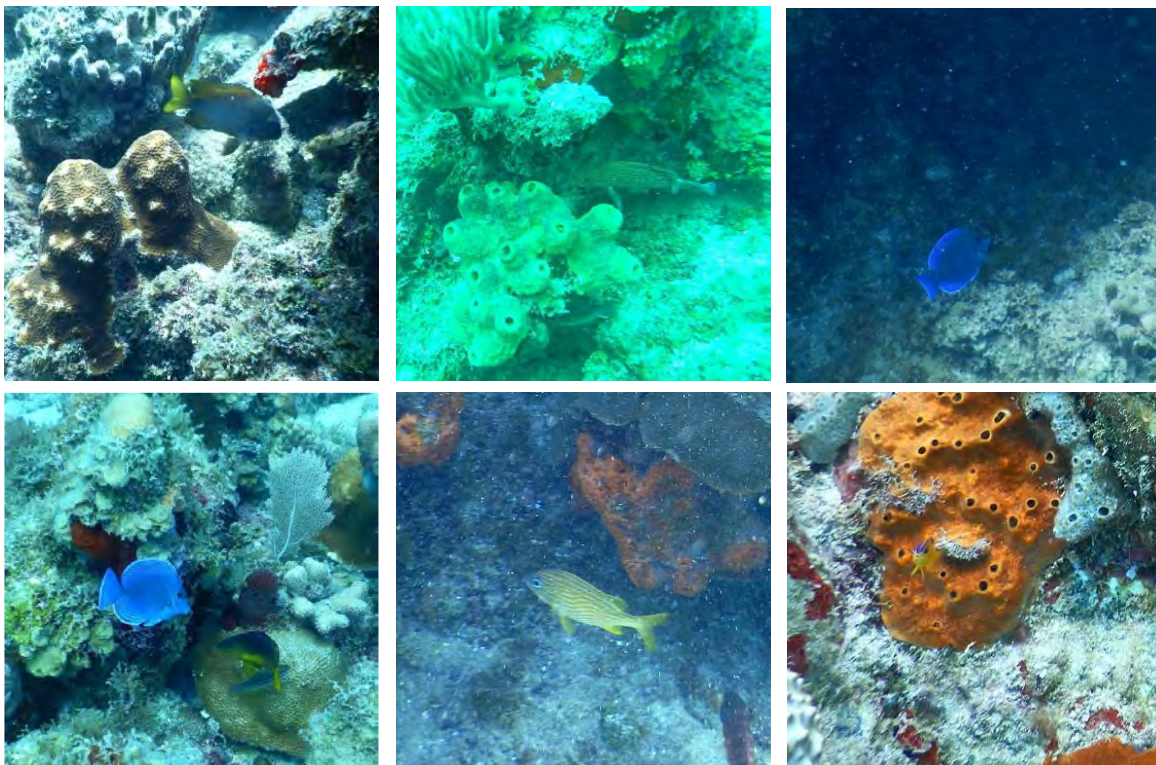


Figure 9. Fish encountered in this survey **A.** Yellowtail damselfish and *O. annularis* **B.** Graysby **C.** Blue tang **D.** Hamlet and Blue tang **E.** French grunt **D.** Longfin Damselfish juvenile

## Appendix A. Species list

| Marine Algae         |                  |                                                                                                                      |                                         |
|----------------------|------------------|----------------------------------------------------------------------------------------------------------------------|-----------------------------------------|
| <u>Phylum</u>        | <u>Family</u>    | <u>Species</u>                                                                                                       | <u>Common Name</u>                      |
| <b>Tracheophyta</b>  | Hydrocharitaceae | <i>Halophila stipulacea</i>                                                                                          |                                         |
| <b>Chlorophyta</b>   | Halimedacea      | <i>Halimeda opuntia</i><br><i>Halimeda tuna</i>                                                                      | Watercress                              |
|                      | Udoteaceae       | <i>Penicillus pyriformis</i><br><i>Penicillus dumetosus</i><br><i>Udotea occidentalis</i><br><i>Udotea flabellum</i> | Flat-top bristle brush<br>Shaving brush |
|                      | Valoniaceae      | <i>Ventricaria ventricosa</i>                                                                                        | Sea pearl                               |
|                      | Dictyotaceae     | <i>Dictyota spp</i><br><i>Padina spp.</i><br><i>Lobophora spp.</i>                                                   | Y-branched algae<br>White scroll algae  |
| <b>Phaeophyta</b>    | Sargassaceae     | <i>Turbinaria turbinata</i><br><i>Sargassum spp</i>                                                                  | Saucer leaf                             |
| <b>Cyanobacteria</b> | Schizotrichaceae | <i>Schizotrichaceae spp.</i>                                                                                         |                                         |

| Corals         |                                                                                                                        |                                                                                              |                                     |  |
|----------------|------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|-------------------------------------|--|
| <u>Family</u>  | <u>Species</u>                                                                                                         | <u>Common Name</u>                                                                           | <u>Conservation Status</u>          |  |
| Stony Corals   |                                                                                                                        |                                                                                              |                                     |  |
| Acroporidae    | <i>Acropora palmata</i>                                                                                                | Elkhorn coral                                                                                | critically endangered               |  |
| Agariciidae    | <i>Agaricea agaricites</i>                                                                                             | Lettuce coral                                                                                |                                     |  |
| Astrocoeniidae | <i>Stephanocoenia intersepta</i>                                                                                       | Blushing star coral                                                                          |                                     |  |
| Faviidae       | <i>Orbicella annularis</i><br><i>Orbicella faveolata</i><br><i>Orbicella franksi</i><br><i>Pseudodiploria strigosa</i> | Boulder star coral<br>Mountainous star coral<br>Knobby star coral<br>Symmetrical brain coral |                                     |  |
| Montastaeidae  | <i>Montastraea cavernosa</i>                                                                                           | Giant star coral                                                                             | critically endangered<br>vulnerable |  |
| Mussidae       | <i>Diploria labyrinthiformis</i><br><i>Colpophyllia natans</i>                                                         | Grooved brain coral<br>Boulder brain coral                                                   |                                     |  |
| Pocilloporidae | <i>Madracis mirabilis</i>                                                                                              | Yellow pencil coral                                                                          |                                     |  |
| Poritidae      | <i>Porites asteroides</i><br><i>Porites porites</i>                                                                    | Mustard hill coral<br>Finger coral                                                           |                                     |  |
| Siderastreidae | <i>Siderastrea radians</i><br><i>Siderastrea siderea</i>                                                               | Lesser starlet coral<br>Massive starlet coral                                                | critically endangered<br>vulnerable |  |
| Scleractinia   | <i>Solenastrea bournoni</i>                                                                                            | Smooth star coral                                                                            |                                     |  |
| Hydrocorals    |                                                                                                                        |                                                                                              |                                     |  |
| Milleporidae   | <i>Millepora alcicornis</i><br><i>Millepora complanate</i>                                                             | Branching fire coral<br>Blade fire coral                                                     |                                     |  |
| Gorgonians     |                                                                                                                        |                                                                                              |                                     |  |
| Briareidae     | <i>Briareum asbestinum</i>                                                                                             | Corky sea finger                                                                             | critically endangered<br>vulnerable |  |
| Plexauridae    | <i>Plexaura flexuosa</i><br><i>Pseudoplexaura spp</i><br><i>Eunicea spp</i>                                            | Bent sea rod<br>Porous sea rod<br>Knobby sea rod                                             |                                     |  |
| Gorgoniidae    | <i>Pseudopterogorgia spp</i><br><i>Gorgonia ventalina</i>                                                              | Sea plumes<br>Common sea fan                                                                 |                                     |  |

## Marine macroinvertebrates

| <u>Phylum</u>        | <u>Species</u>                 | <u>Common name</u>      |
|----------------------|--------------------------------|-------------------------|
| <b>Annelida</b>      | <i>Spirobranchus giganteus</i> | Christmas tree worm     |
|                      | <i>Hermodice carunculata</i>   | Bearded fireworm        |
| <b>Arthropoda</b>    | <i>Panulirus argus</i>         | Caribbean spiny lobster |
| <b>Cnidaria</b>      | <i>Halocordyle disticha</i>    | Christmas tree hydroid  |
| <b>Echinodermata</b> | <i>Davidaster ribiginosa</i>   | Golden crinoid          |
|                      | <i>Linckia guildingii</i>      | Common comet star       |
|                      | <i>Diadema antillarum</i>      | Long-spined urchin      |
|                      | <i>Tripneustes ventricosus</i> | West Indian sea egg     |
|                      | <i>Echinometra lucunter</i>    | Rock boring urchin      |
| <b>Porifera</b>      | <i>Pseudoceratina crassa</i>   | Branching tube sponge   |
|                      | <i>Callyspongia plicifera</i>  | Azure vase sponge       |
|                      | <i>Xestospongia muta</i>       | Giant barrel sponge     |
|                      | <i>Ircinia strobilina</i>      | Black ball sponge       |
|                      | <i>Cinachyra sp.</i>           | Orange ball sponge      |
|                      | <i>Cliona delitrix</i>         | Red boring sponge       |
| <b>Mollusca</b>      | <i>Acanthopleura granulata</i> | Fuzzy chiton            |
|                      | <i>Lithopoma tectum</i>        | West Indian starsnail   |
|                      | <i>Cerithium litteratum</i>    | Stocky cerith           |

## Fish

| <u>Family</u>         | <u>Species</u>                   | <u>Common name</u>     | <u>Local abundance</u> |
|-----------------------|----------------------------------|------------------------|------------------------|
| <b>Acanthuridae</b>   | <i>Acanthurus coeruleus</i>      | Blue tang              | common                 |
|                       | <i>Acanthurus bahianus</i>       | Ocean surgeonfish      | common                 |
|                       | <i>Acanthurus chirugus</i>       | Doctorfish             | common                 |
| <b>Aulostomidae</b>   | <i>Aulostomus maculatus</i>      | Atlantic trumpetfish   | common                 |
| <b>Blennidae</b>      | <i>Ophioblennius macchurei</i>   | Redlip blenny          | uncommon               |
|                       | <i>Malacoctenus triangulatus</i> | Saddled blenny         | common                 |
| <b>Carangidae</b>     | <i>Caranx ruber</i>              | Bar jack               | common                 |
|                       | <i>Caranx bartholomew</i>        | Yellow jack            | common                 |
| <b>Chaetodontidae</b> | <i>Chaetodon capistratus</i>     | Foureye Butterflyfish  | uncommon               |
| <b>Gerreidae</b>      | <i>Gerres cinereus</i>           | Yellowfin mojarra      | common                 |
| <b>Grammatidae</b>    | <i>Gramma loreto</i>             | Fairy basslet          | common                 |
| <b>Haemulon</b>       | <i>Haemulon flavolineatum</i>    | French grunt           | common                 |
|                       | <i>Haemulon carbonarium</i>      | Caesar Grunt           | common                 |
| <b>Holocentridae</b>  | <i>Holocentrus adscensionis</i>  | Squirrelfish           | common                 |
|                       | <i>Holocentrus rufus</i>         | Longspine squirrelfish | uncommon               |
|                       | <i>Myripristis jacobus</i>       | Blackbar soldierfish   | uncommon               |
| <b>Labridae</b>       | <i>Halichoeres radiatus</i>      | Puddingwife            | occasional             |
|                       | <i>Halichoeres bivittatus</i>    | Slippery dick          | common                 |
|                       | <i>Bodianus rufus</i>            | Spanish hogfish        | common                 |
|                       | <i>Thalasoma bifasciatum</i>     | Bluehead wrasse        | common                 |
| <b>Lutjanidae</b>     | <i>Lutjanus apodus</i>           | Schoolmaster snapper   | rare                   |
|                       | <i>Lutjanus mahogoni</i>         | Mahogany Snapper       | rare                   |
|                       | <i>Ocyurus chrysurus</i>         | Yellowtail snapper     | common                 |
| <b>Mullidae</b>       | <i>Pseudopeneus maculatus</i>    | Spotted goatfish       | occasional             |
| <b>Pomacanthidae</b>  | <i>Pomacanthus paru</i>          | French Angelfish       | rare                   |
|                       | <i>Pomacanthus archuatus</i>     | Grey Angelfish         | rare                   |
| <b>Pomocentridae</b>  | <i>Stegastes partitus</i>        | Bicolor damselfish     | common                 |
|                       | <i>Stegastes leucostictus</i>    | Beaugregory            | common                 |
|                       | <i>Stegastes adustus</i>         | Dusky damselfish       | common                 |
|                       | <i>Stegastes variabilis</i>      | Cocoa damselfish       | common                 |
|                       | <i>Stegastes planifrons</i>      | 3-spot damselfish      | common                 |
|                       | <i>Abudefduf saxatilis</i>       | Sergeant major         | common                 |
|                       | <i>Microspathodon chrysurus</i>  | Yellowtail Damselfish  | common                 |

## Fish cont.

| <u>Family</u>         | <u>Species</u>                  | <u>Common name</u>   | <u>Local abundance</u>         |
|-----------------------|---------------------------------|----------------------|--------------------------------|
| <b>Pomocentridae</b>  | <i>Chromis cyanea</i>           | Blue Chromis         | common                         |
|                       | <i>Chromis multilineata</i>     | Brown Chromis        | common                         |
| <b>Scaridae</b>       | <i>Sparisoma viride</i>         | Stoplight parrotfish | occasional                     |
|                       | <i>Sparisoma aurofrenatum</i>   | Redband parrotfish   | occasional                     |
|                       | <i>Scarus iseri</i>             | Striped Parrotfish   | common                         |
|                       | <i>Scarus taeniopterus</i>      | Princess parrotfish  | common                         |
| <b>Sciaenidae</b>     | <i>Equetus punctatus</i>        | Spotted drum         | rare                           |
| <b>Scombridae</b>     | <i>Scomberomorus cavalla</i>    | Kingfish             | occasional                     |
| <b>Serranidae</b>     | <i>Epinephelus striatus</i>     | Nassau grouper       | <b>* critically endangered</b> |
|                       | <i>Hypoplectrus unicolor</i>    | Butter hamlet        | occasional                     |
|                       | <i>Hypoplectrus puella</i>      | Barred hamlet        | rare                           |
|                       | <i>Serranus tigrinus</i>        | Harlequin bass       | uncommon                       |
|                       | <i>Hypoplectrus nigricans</i>   | Black hamlet         | uncommon                       |
|                       | <i>Cephalopholis cruentatus</i> | Graysby              | rare                           |
|                       | <i>Epinephelus guttatus</i>     | Red Hind             | uncommon                       |
| <b>Synodontidae</b>   | <i>Synodus intermedius</i>      | Sandiver             | uncommon                       |
| <b>Tetraodontidae</b> | <i>Canthigaster rostrata</i>    | Sharpnose puffer     | uncommon                       |

## Marine Macrofauna

| <u>Family</u>      | <u>Species</u>                | <u>Common name</u>   | <u>Status</u>                  |
|--------------------|-------------------------------|----------------------|--------------------------------|
| <b>Cheloniidae</b> | <i>Eretmochelys imbricata</i> | Hawksbill sea turtle | <b>* critically endangered</b> |

## Attachment F – Glint & Glare Study



# FORGESOLAR GLARE ANALYSIS

Project: **Fortuna**

Site configuration: **Fortuna Phase 1**

Created 29 Aug, 2024

Updated 29 Aug, 2024

Time-step 1 minute

Timezone offset UTC-4

Minimum sun altitude 0.0 deg

DNI peaks at 1,000.0 W/m<sup>2</sup>

Site ID 127989.19381

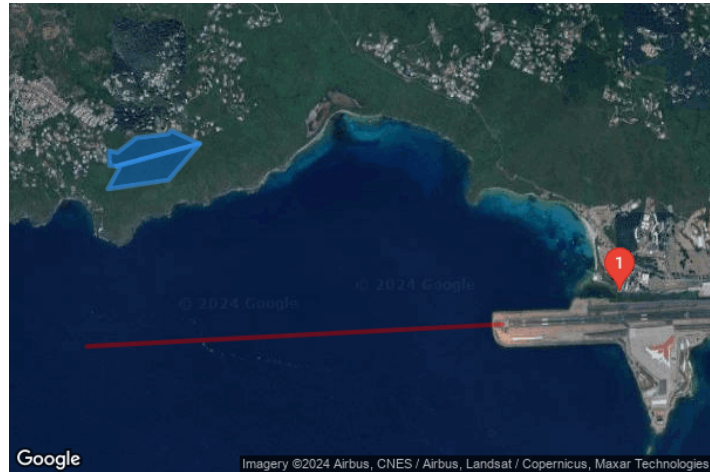
Ocular transmission coefficient 0.5

Pupil diameter 0.002 m

Eye focal length 0.017 m

Sun subtended angle 9.3 mrad

PV analysis methodology V2



## Glare Policy Adherence

The following table estimates the policy adherence of this glare analysis according to the **2021** U.S. Federal Aviation Administration Policy:

### Review of Solar Energy System Projects on Federally-Obligated Airports

This policy may require the following criteria be met for solar energy systems on airport property:

- No glare of any kind for Air Traffic Control Tower(s) ("ATCT") at cab height.
- Default analysis and observer characteristics, including 1-minute time step.

ForgeSolar is not affiliated with the U.S. FAA and does not represent or speak officially for the U.S. FAA. ForgeSolar cannot approve or deny projects - results are informational only. Contact the relevant airport and FAA district office for information on policy and requirements.

| COMPONENT           | STATUS | DESCRIPTION                                                        |
|---------------------|--------|--------------------------------------------------------------------|
| Analysis parameters | PASS   | Analysis time interval and eye characteristics used are acceptable |
| ATCT(s)             | FAIL   | Receptor(s) marked as ATCT receive green and/or yellow glare       |

The referenced policy can be read at <https://www.federalregister.gov/d/2021-09862>

# Component Data

This report includes results for PV arrays and Observation Point ("OP") receptors marked as ATCTs. Components that are not pertinent to the policy, such as routes, flight paths, and vertical surfaces, are excluded.

## PV Arrays

**Name:** PV array 1 - northwest  
**Axis tracking:** Fixed (no rotation)  
**Tilt:** 20.0°  
**Orientation:** 180.0°  
**Rated power:** 10000.0 kW  
**Panel material:** Smooth glass with AR coating  
**Reflectivity:** Vary with sun  
**Slope error:** correlate with material



| Vertex | Latitude (°) | Longitude (°) | Ground elevation (ft) | Height above ground (ft) | Total elevation (ft) |
|--------|--------------|---------------|-----------------------|--------------------------|----------------------|
| 1      | 18.348885    | -65.012292    | 617.90                | 4.60                     | 622.50               |
| 2      | 18.348746    | -65.011696    | 632.04                | 4.60                     | 636.64               |
| 3      | 18.349780    | -65.010290    | 749.74                | 4.60                     | 754.34               |
| 4      | 18.350039    | -65.007994    | 778.83                | 4.60                     | 783.43               |
| 5      | 18.350272    | -65.007721    | 794.89                | 4.60                     | 799.49               |
| 6      | 18.349371    | -65.005641    | 648.44                | 4.60                     | 653.04               |
| 7      | 18.347812    | -65.011724    | 579.70                | 4.60                     | 584.30               |
| 8      | 18.347867    | -65.012276    | 553.44                | 4.60                     | 558.04               |
| 9      | 18.348885    | -65.012292    | 616.27                | 4.60                     | 620.87               |

**Name:** PV array 2 - southeast  
**Axis tracking:** Fixed (no rotation)  
**Tilt:** 20.0°  
**Orientation:** 180.0°  
**Rated power:** 10000.0 kW  
**Panel material:** Smooth glass with AR coating  
**Reflectivity:** Vary with sun  
**Slope error:** correlate with material



| Vertex | Latitude (°) | Longitude (°) | Ground elevation (ft) | Height above ground (ft) | Total elevation (ft) |
|--------|--------------|---------------|-----------------------|--------------------------|----------------------|
| 1      | 18.347815    | -65.011739    | 556.50                | 4.60                     | 561.10               |
| 2      | 18.349377    | -65.005642    | 580.88                | 4.60                     | 585.48               |
| 3      | 18.346853    | -65.007936    | 363.25                | 4.60                     | 367.85               |
| 4      | 18.346231    | -65.012377    | 345.02                | 4.60                     | 349.62               |
| 5      | 18.347658    | -65.011548    | 587.53                | 4.60                     | 592.13               |

## Observation Point ATCT Receptors

| Name   | ID | Latitude (°) | Longitude (°) | Elevation (ft) | Height (ft) |
|--------|----|--------------|---------------|----------------|-------------|
| 1-ATCT | 1  | 18.339123    | -64.974828    | 59.46          | 75.00       |

Map image of 1-ATCT



# Glare Analysis Results

## Summary of Results Glare with low potential for temporary after-image predicted

| PV Array               | Tilt | Orient | Annual Green Glare |      | Annual Yellow Glare |     | Energy<br>kWh |
|------------------------|------|--------|--------------------|------|---------------------|-----|---------------|
|                        | °    | °      | min                | hr   | min                 | hr  |               |
| PV array 1 - northwest | 20.0 | 180.0  | 1,605              | 26.8 | 0                   | 0.0 | 24,240,000.0  |
| PV array 2 - southeast | 20.0 | 180.0  | 1,886              | 31.4 | 0                   | 0.0 | 24,250,000.0  |

Total annual glare received by each receptor; may include duplicate times of glare from multiple reflective surfaces.

| Receptor | Annual Green Glare |      | Annual Yellow Glare |     |
|----------|--------------------|------|---------------------|-----|
|          | min                | hr   | min                 | hr  |
| 1-ATCT   | 3,491              | 58.2 | 0                   | 0.0 |

## PV: PV array 1 - northwest

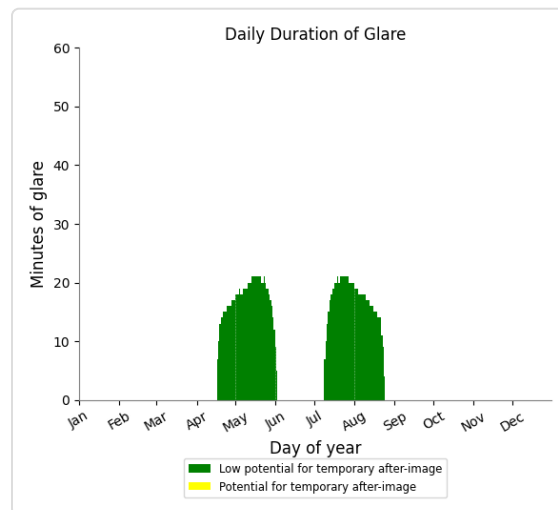
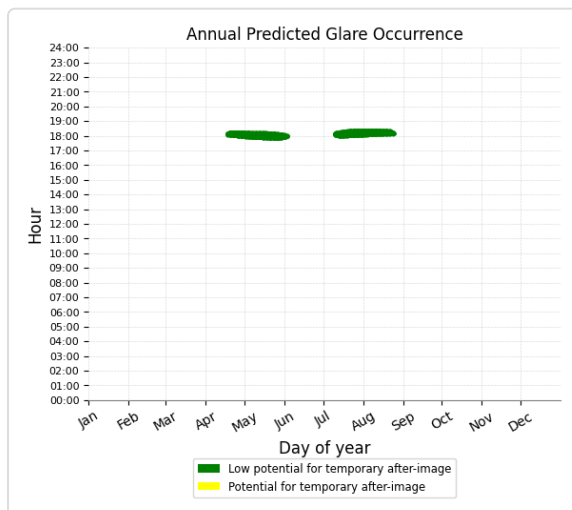
| Receptor | Annual Green Glare |      | Annual Yellow Glare |     |
|----------|--------------------|------|---------------------|-----|
|          | min                | hr   | min                 | hr  |
| 1-ATCT   | 1,605              | 26.8 | 0                   | 0.0 |

## PV array 1 - northwest and 1-ATCT

Receptor type: ATCT Observation Point

0 minutes of yellow glare

1,605 minutes of green glare



## PV: PV array 2 - southeast

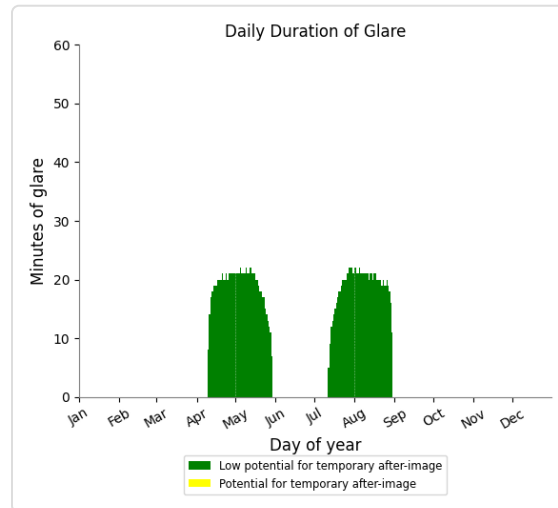
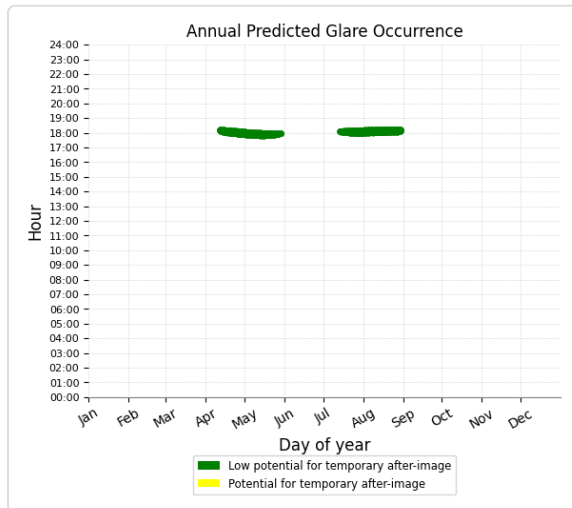
| Receptor | Annual Green Glare |      | Annual Yellow Glare |     |
|----------|--------------------|------|---------------------|-----|
|          | min                | hr   | min                 | hr  |
| 1-ATCT   | 1,886              | 31.4 | 0                   | 0.0 |

## PV array 2 - southeast and 1-ATCT

Receptor type: ATCT Observation Point

0 minutes of yellow glare

1,886 minutes of green glare



# Assumptions

---

"Green" glare is glare with low potential to cause an after-image (flash blindness) when observed prior to a typical blink response time.

"Yellow" glare is glare with potential to cause an after-image (flash blindness) when observed prior to a typical blink response time.

Times associated with glare are denoted in Standard time. For Daylight Savings, add one hour.

The algorithm does not rigorously represent the detailed geometry of a system; detailed features such as gaps between modules, variable height of the PV array, and support structures may impact actual glare results. However, we have validated our models against several systems, including a PV array causing glare to the air-traffic control tower at Manchester-Boston Regional Airport and several sites in Albuquerque, and the tool accurately predicted the occurrence and intensity of glare at different times and days of the year.

Several V1 calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results for large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare. This primarily affects V1 analyses of path receptors.

Random number computations are utilized by various steps of the annual hazard analysis algorithm. Predicted minutes of glare can vary between runs as a result. This limitation primarily affects analyses of Observation Point receptors, including ATCTs. Note that the SGHAT/ ForgeSolar methodology has always relied on an analytical, qualitative approach to accurately determine the overall hazard (i.e. green vs. yellow) of expected glare on an annual basis.

The analysis does not automatically consider obstacles (either man-made or natural) between the observation points and the prescribed solar installation that may obstruct observed glare, such as trees, hills, buildings, etc.

The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size. Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)

The variable direct normal irradiance (DNI) feature (if selected) scales the user-prescribed peak DNI using a typical clear-day irradiance profile. This profile has a lower DNI in the mornings and evenings and a maximum at solar noon. The scaling uses a clear-day irradiance profile based on a normalized time relative to sunrise, solar noon, and sunset, which are prescribed by a sun-position algorithm and the latitude and longitude obtained from Google maps. The actual DNI on any given day can be affected by cloud cover, atmospheric attenuation, and other environmental factors.

The ocular hazard predicted by the tool depends on a number of environmental, optical, and human factors, which can be uncertain. We provide input fields and typical ranges of values for these factors so that the user can vary these parameters to see if they have an impact on the results. The speed of SGHAT allows expedited sensitivity and parametric analyses.

The system output calculation is a DNI-based approximation that assumes clear, sunny skies year-round. It should not be used in place of more rigorous modeling methods.

Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid based on aggregated research data. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.

Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.

Refer to the Help page at [www.forgesolar.com/help/](http://www.forgesolar.com/help/) for assumptions and limitations not listed here.

Default glare analysis parameters and observer eye characteristics (for reference only):

- Analysis time interval: 1 minute
- Ocular transmission coefficient: 0.5
- Pupil diameter: 0.002 meters
- Eye focal length: 0.017 meters
- Sun subtended angle: 9.3 milliradians

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## Attachment G – Driveway Permit Application and Plans





## DRIVEWAY PERMIT APPLICATION

DATE 10/21/2025

### OWNER INFORMATION

Name STF Solar, LLC (A VIElectron, LLC company) c/o Christian Loranger Telephone 1-508-965-8637

Email Address nbdssolar@gmail.com

Parcel(s)No./Address 102404046300 & 104901013400, No. 2 & 3B Fortuna, Estate Fortuna, St. Thomas, VI 00802

| DRIVEWAY PERMIT FEES                                 |                                                                                                                                 |
|------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| COMMERCIAL                                           | RESIDENTIAL                                                                                                                     |
| \$35 + IMPACT FEE                                    | \$35                                                                                                                            |
| IMPACT FEE                                           | *The IMPACT FEE is a one-time cost assessed to commercial permits, to offset the latent effects on the island's infrastructure. |
| UP TO 3000 SQ. FT. \$450                             |                                                                                                                                 |
| OVER 3000 SQ. FT. \$650                              |                                                                                                                                 |
| ACCEPTED METHODS OF PAYMENT                          |                                                                                                                                 |
| Bank/Cashier's Check, Money Order, Cash, Credit Card |                                                                                                                                 |

### DESIGNER INFORMATION

Name Hoyle Tanner & Associates, Inc. Email Address \_\_\_\_\_

Telephone \_\_\_\_\_ Registration No. \_\_\_\_\_

|                                                                               |                                                                                        |
|-------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
| Driveway Width <u>20</u> ft.                                                  | Swale Width <u>N/A</u> ft.                                                             |
| Driveway Length <u>120</u> ft.                                                | Swale Depth <u>N/A</u> ft.                                                             |
| Grade of proposed Road/Driveway at intersection of Public Road and/or highway | Match existing 2%; maximum 8%<br>_____ percent/Indicate plus or minus slope <u>+/-</u> |
| Along intersection of Culvert                                                 | Invert Depth <u>2 +/-</u> ft., W <u>18" Dia.</u> Ft. & L <u>45 +/-</u>                 |

Please submit four (4) copies of map showing: site plan, location map and detailed driveway drawings.

### DEPARTMENTAL USE ONLY

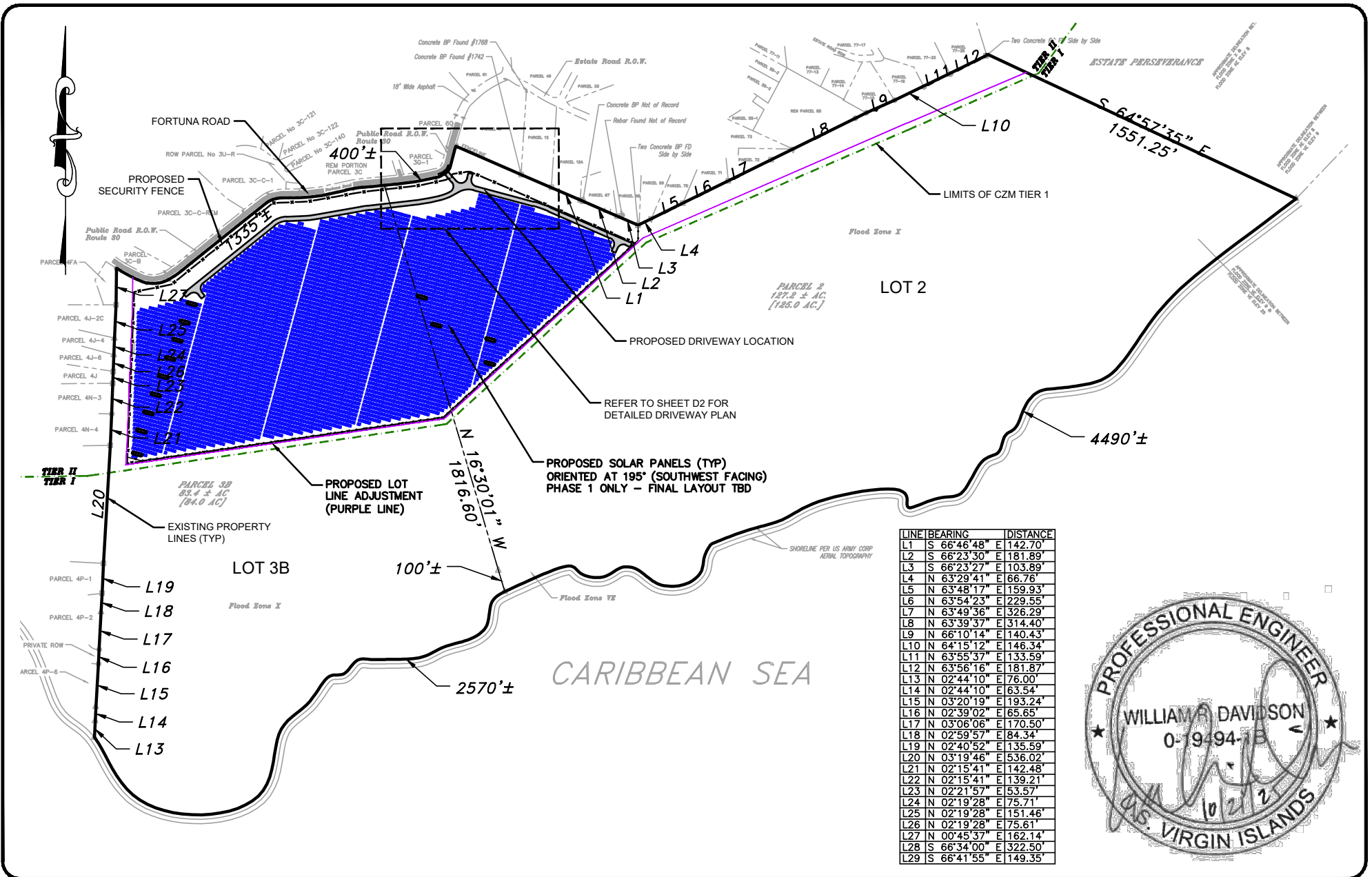
☐ Permit Approved ☐ Permit Disapproved Permit # \_\_\_\_\_

Date Issued \_\_\_\_\_ Expiration \_\_\_\_\_

Total Amount Due \_\_\_\_\_ Permit Fees Collected \_\_\_\_\_

Attachments: ☐ Drawings Samples ☐ Construction Specifications

Commissioner \_\_\_\_\_



## OVERALL SITE PLAN (PHASE 1)

LOTS 3B & 2 FORTUNA  
 ESTATE FORTUNA, SAINT THOMAS, VI 00802

STF SOLAR, LLC  
 A VIELECTRON, LLC COMPANY



95 E. Mitchell Hammock Road  
 Suite 200  
 Oviedo, FL 32765  
 (407) 380-1919  
 www.hoyletanner.com

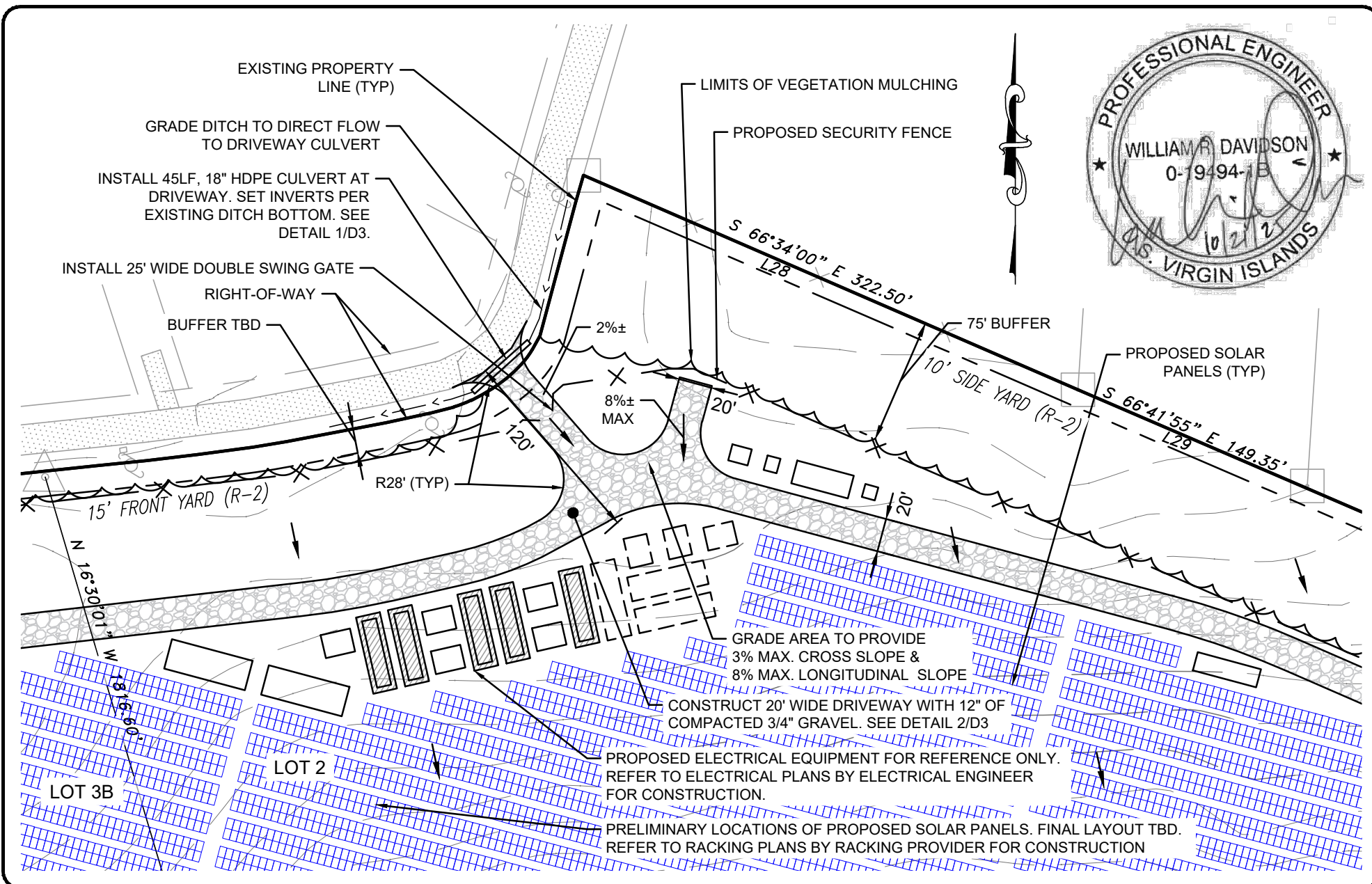
DATE: 10/21/2025

SCALE:

1"=600'

FIGURE:

D1



## ACCESS DRIVEWAY SITE PLAN

LOTS 3B & 2 FORTUNA  
ESTATE FORTUNA, SAINT THOMAS, VI 00802

STF SOLAR, LLC  
A VIELECTRON, LLC COMPANY



95 E. Mitchell Hammock Road  
Suite 200  
Oviedo, FL 32765  
(407) 380-1919  
www.hoyletanner.com

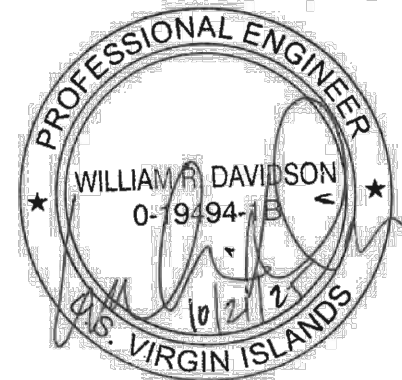
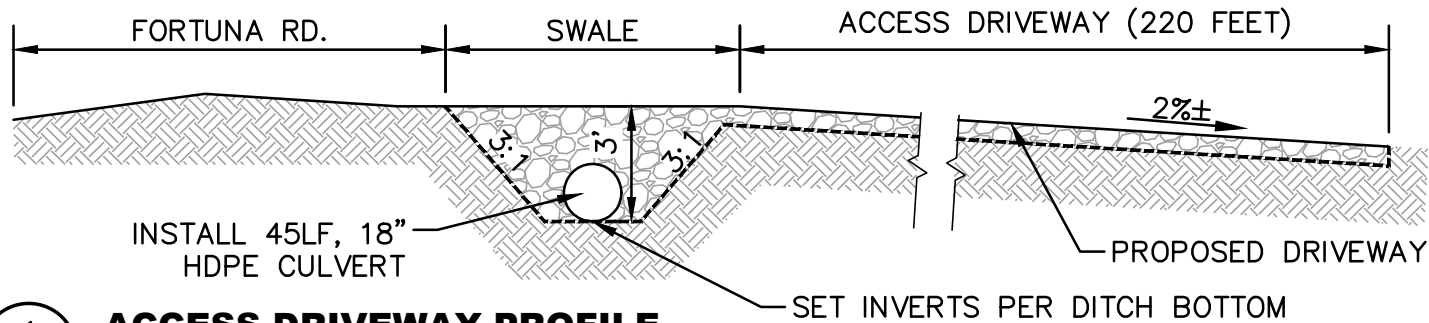
DATE: 10/21/2025

SCALE:

1"=80'

FIGURE:

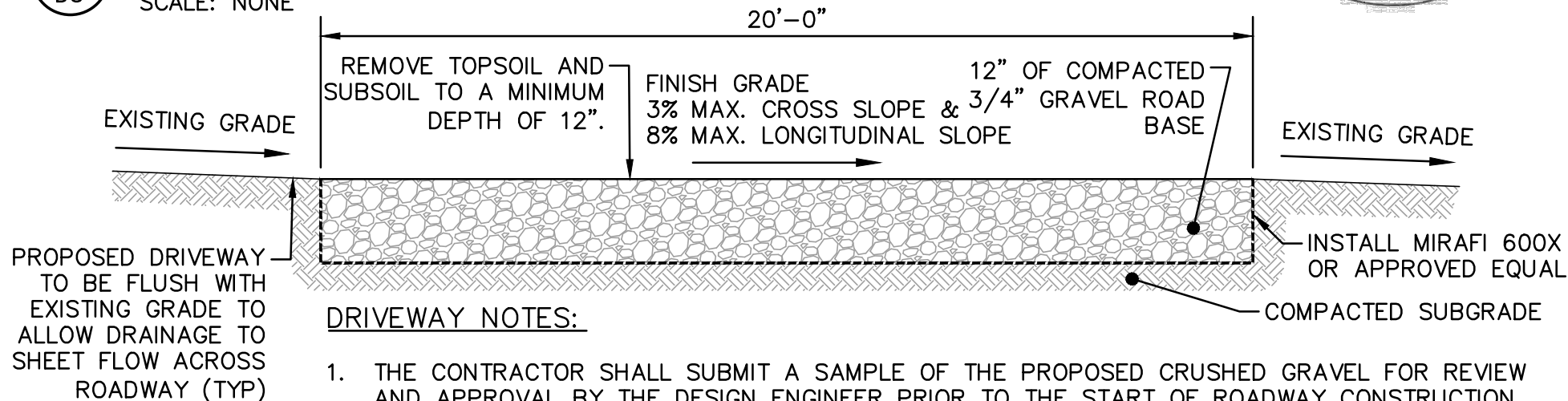
**D2**



1  
D3

## ACCESS DRIVEWAY PROFILE

SCALE: NONE



### DRIVEWAY NOTES:

1. THE CONTRACTOR SHALL SUBMIT A SAMPLE OF THE PROPOSED CRUSHED GRAVEL FOR REVIEW AND APPROVAL BY THE DESIGN ENGINEER PRIOR TO THE START OF ROADWAY CONSTRUCTION.
2. THE PROFILE OF THE ROAD SHALL FOLLOW THE EXISTING TERRAIN TO THE GREATEST EXTENT POSSIBLE.
3. THE DRY DENSITY AFTER COMPACTION SHALL NOT BE LESS THAN 95% OF THE STANDARD PROCTOR TEST AND DONE IN ACCORDANCE WITH THE REQUIREMENTS OF ASTM D698.

2  
D3

## ACCESS DRIVEWAY SECTION

SCALE: NONE

### ACCESS DRIVEWAY DETAILS

LOTS 3B & 2 FORTUNA  
ESTATE FORTUNA, SAINT THOMAS, VI 00802  
STF SOLAR, LLC  
A VIELECTRON, LLC COMPANY



95 E. Mitchell Hammock Road  
Suite 200  
Oviedo, FL 32765  
(407) 380-1919  
www.hoyletanner.com

DATE: 10/21/2025

SCALE:

N.T.S.

FIGURE:

D3

## Attachment H – Site and Erosion Control Plans



**ISSUED FOR PERMITTING**

EXISTING CONDITIONS NOTES:

1. THE PURPOSE OF THIS PLAN IS TO DEPICT THE EXISTING CONDITIONS FOR PARCEL NO. 2 & 3B OF ESTATE FORTUNA FOR THE DEVELOPMENT OF A PROPOSED SOLAR ENERGY FACILITY WITH BATTERY STORAGE.
2. THIS SURFACE FEATURES, TOPOGRAPHY AND PROPERTY LINES SHOWN ARE SOLELY BASED ON THE REFERENCE PLANS LISTED BELOW AND ARE INTENDED AS AN EXISTING CONDITIONS PLAN ONLY. NO SURVEY WORK WAS PERFORMED BY HOYLE TANNER. THIS IS NOT A BOUNDARY PLAN.
3. SURVEY BY THEODOLITE AND EDM, AND PERFORMED BY MARVIN BERNING & ASSOCIATES.
4. SURVEY IS U.S. MEASURE.
5. UNDERGROUND UTILITIES, IF ANY, WERE NOT LOCATED FOR THIS SURVEY EXCEPT AS NOTED BY SURFACE FEATURES.
6. PORTIONS OF THE SUBJECT PARCEL IS LOCATED IN FLOOD ZONE "AE" AND "VE" AS SHOWN ON THE SURVEY MAP AND FLOOD INSURANCE RATE MAP COMMUNITY NUMBER 7800000023G; EFFECTIVE DATE APRIL 16, 2007. THE REMAINDER OF THE PARCEL IS LOCATED IN FLOOD ZONE "X".
7. THERE ARE NO WETLANDS LOCATED ON SUBJECT PARCELS.
8. PORTIONS OF THE PROPERTY ARE EXCEPTIONALLY OVERGROWN AND APPEAR TO BE, FOR THE MOST PART, VACANT. FEATURES MAY BE EXPOSED AFTER CLEARING WHICH WERE NOT OBSERVED DURING THE COURSE OF THIS SURVEY.
9. THE PROPERTY WAS PARTIALLY CLEARED IN 15' TRANSECTS BY MAY 2024 PER AN APPROVAL LETTER DATED DECEMBER 1, 2023 IN ORDER TO CONDUCT VARIOUS BIOLOGICAL AND CULTURAL RESOURCE STUDIES. THE REMAINING PORTIONS OF THE SITE IS STILL EXCEPTIONALLY OVERGROWN AND APPEARS TO BE, FOR THE MOST PART, VACANT. FEATURES MAY BE EXPOSED AFTER FULL CLEARING WHICH WERE NOT OBSERVED DURING SURVEYING ROM THE PARTIAL CLEARING.
10. DURING THE ON-GOING APPROVED PARTIAL CLEARING OF THE SITE, TWO (2) GHUTS HAVE BEEN IDENTIFIED AND ARE IN THE PROCESS OF BEING SURVEYED. A 25' BUFFER FROM THE GHUT RIDGE SHALL BE PROVIDED PRIOR TO THE INSTALLATION OF THE PROPOSED SOLAR SYSTEM.

REFERENCE PLAN:

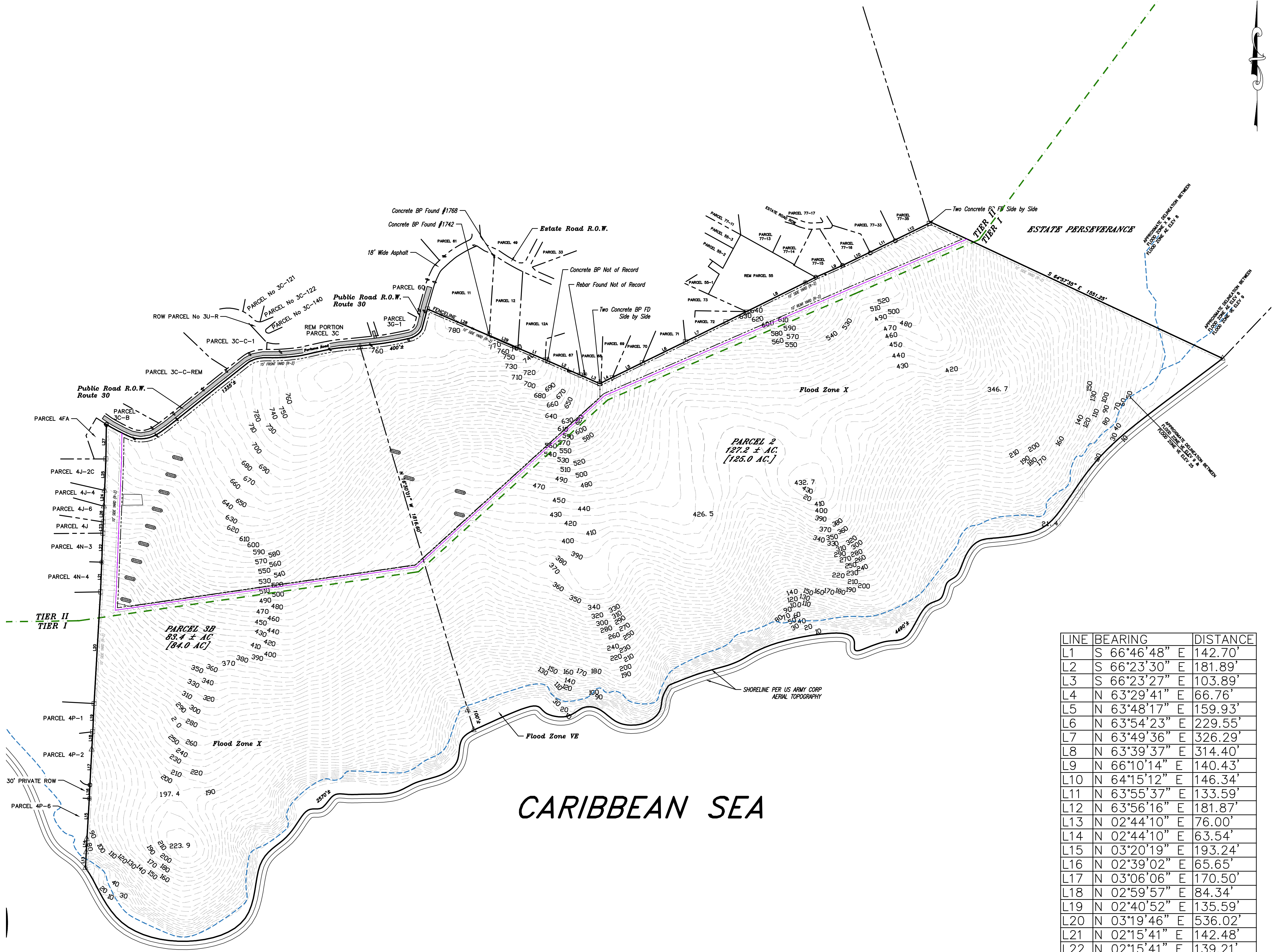
1. "TOPOGRAPHICAL SURVEY OF PARCEL 2 & 3B ESTATE FORTUNA - NO. 8 WEST END QUARTER, ST. THOMAS, USVI", SCALE 1"=400', DATED MARCH 14, 2024, BY MARVIN BERNING & ASSOCIATES PROFESSIONAL LAND SURVEYORS
2. "SURVEY OF PARCEL 2, 3B, EASEMENTS A, B & C ON PARCEL 2 ESTATE FORTUNA - NO. 8 WEST END QUARTER, ST. THOMAS, USVI", SCALE 1"=400', DATED MAY 8, 2024, BY MARVIN BERNING & ASSOCIATES PROFESSIONAL LAND SURVEYORS

PROPERTY INFORMATION:

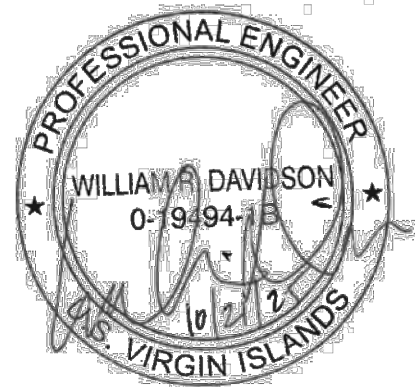
1. OWNERS OF RECORD:  
PARCEL 2  
DOWLING WILLIAM JR. TRUSTEE  
90 BROAD STREET  
NEW YORK, NY 10004  
  
PARCEL 3B  
SEAVIEW INC. - LINDBERG BAY  
90 BROAD STREET  
NEW YORK, NY 10004
2. PARCEL:  
NO. 2 & 3B FORTUNA  
ESTATE FORTUNA  
SAINT THOMAS, VI 00802
3. PROPERTY ID:  
102404046300; 104901013400
4. OLG MAP NUMBER:  
D9-27-T51; D9-209-T59
5. ZONING DISTRICT:  
R-2 RESIDENTIAL ZONE:  
  
MINIMUM LOT SIZE = 10,000 S.F.  
FRONT YARD = 15 FEET  
SIDE SETBACK = 10 FEET  
REAR SETBACK = 10 FEET  
BUILDING HEIGHT = 2 STORIES
6. PARCEL AREA:  
9,173,736± S.F. / 210.6± ACRES (TOTAL)  
  
5,540,832± S.F. / 127.2± ACRES (PARCEL 2)  
3,632,904± S.F. / 83.4± ACRES (PARCEL 3B)

EXISTING LEGEND

- |           |                             |
|-----------|-----------------------------|
| +         | SIGN                        |
| —●—       | POWER POLE                  |
| —●—       | STEEL PIN FOUND             |
| — — — —   | SUBJECT PROPERTY LINE       |
| — — — —   | ABUTTER PROPERTY LINE       |
| — — — —   | STRUCTURE SETBACK           |
| — — — —   | FLOOD ZONE LINE             |
| — — — —   | LIMITS OF C2M TIER 1 PERMIT |
| — 170 —   | MAJOR CONTOUR               |
| — OH —    | SHORELINE PER ARMY CORP.    |
| — OH —    | OVERHEAD WIRES              |
| — x — x — | EXISTING FENCE              |
| — — — —   | PAVED ROADWAY               |
| — — — —   | SUBDIVIDED PROPERTY LINE    |



| LINE | BEARING       | DISTANCE |
|------|---------------|----------|
| L1   | S 66°46'48" E | 142.70'  |
| L2   | S 66°23'30" E | 181.89'  |
| L3   | S 66°23'27" E | 103.89'  |
| L4   | N 63°29'41" E | 66.76'   |
| L5   | N 63°48'17" E | 159.93'  |
| L6   | N 63°54'23" E | 229.55'  |
| L7   | N 63°49'36" E | 326.29'  |
| L8   | N 63°39'37" E | 314.40'  |
| L9   | N 66°10'14" E | 140.43'  |
| L10  | N 64°15'12" E | 146.34'  |
| L11  | N 63°55'37" E | 133.59'  |
| L12  | N 63°56'16" E | 181.87'  |
| L13  | N 02°44'10" E | 76.00'   |
| L14  | N 02°44'10" E | 63.54'   |
| L15  | N 03°20'19" E | 193.24'  |
| L16  | N 02°39'02" E | 65.65'   |
| L17  | N 03°06'06" E | 170.50'  |
| L18  | N 02°59'57" E | 84.34'   |
| L19  | N 02°40'52" E | 135.59'  |
| L20  | N 03°19'46" E | 536.02'  |
| L21  | N 02°15'41" E | 142.48'  |
| L22  | N 02°15'41" E | 139.21'  |
| L23  | N 02°21'57" E | 53.57'   |
| L24  | N 02°19'28" E | 75.71'   |
| L25  | N 02°19'28" E | 151.46'  |
| L26  | N 02°19'28" E | 75.61'   |
| L27  | N 00°45'37" E | 162.14'  |
| L28  | S 66°34'00" E | 322.50'  |
| L29  | S 66°41'55" E | 149.35'  |



| REVISION DESCRIPTION                                    | DATE     |
|---------------------------------------------------------|----------|
| ISSUED FOR DPNR STT C2M COMMITTEE REVIEW AND APPROVAL   | 10/30/25 |
| ISSUED FOR DPNR & DPW PERMITTING - NOT FOR CONSTRUCTION | 10/15/25 |
| 1                                                       | REV.     |

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95 E. Mitchell-Hammock Road  
Oviedo, FL 32765  
(407) 380-1919  
www.hoyletanner.com

**HOYLE  
TANNER**

|             |                   |
|-------------|-------------------|
| DESIGNED BY | SES               |
| DRAWN BY    | SES               |
| CHECKED BY  | WRD               |
| DATE:       | SEPTEMBER 5, 2024 |
| SCALE:      | AS SHOWN          |

APPLICANT  
STF SOLAR, LLC  
A VIELECTRON, LLC COMPANY  
5000 EST ENIGHER, STA 4A, PNB 146  
SAINT JOHN, VI 00830

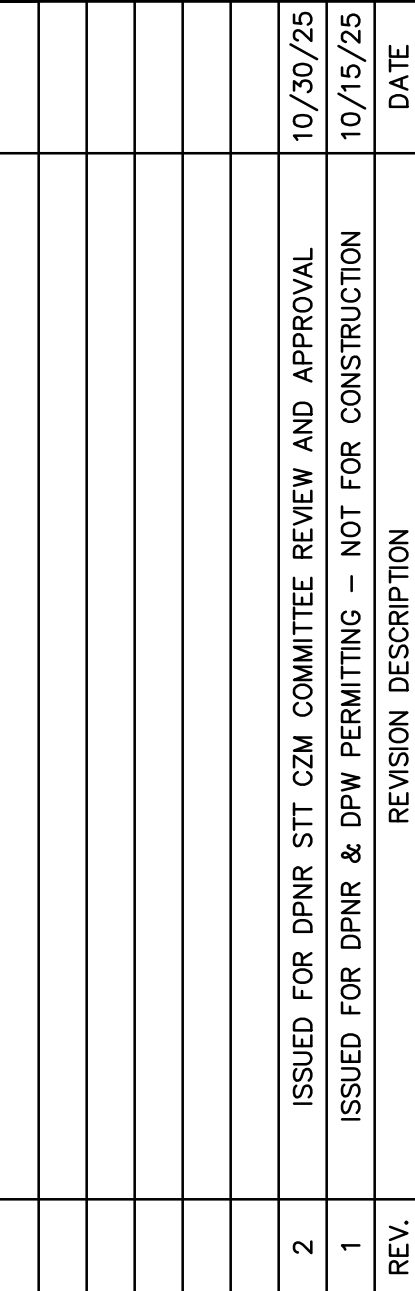
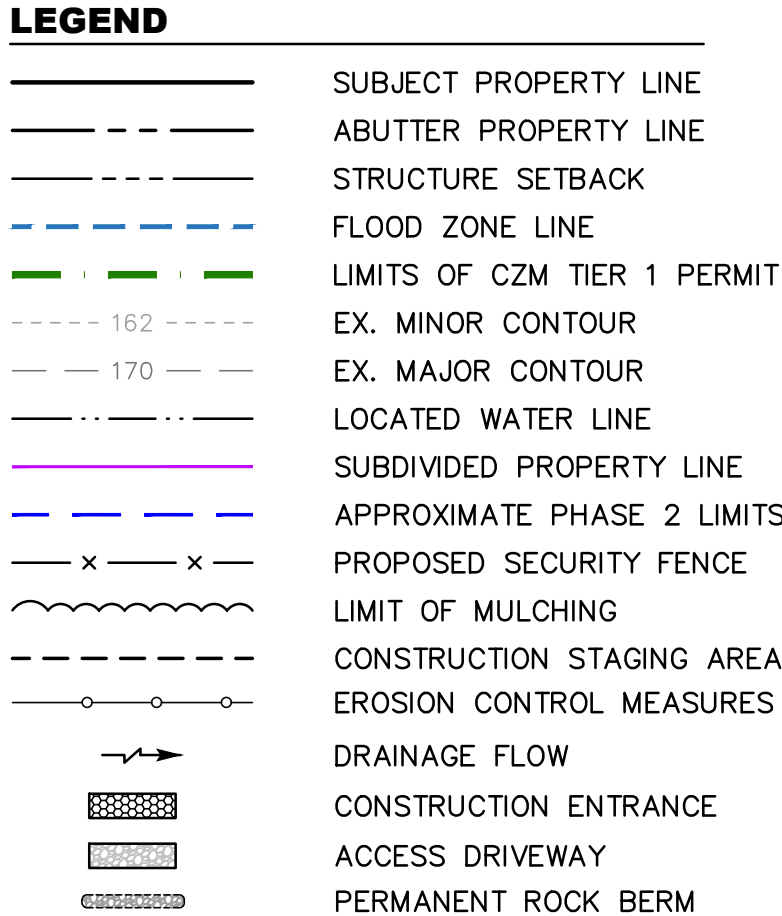
PROJECT  
PROPOSED SOLAR ENERGY FACILITY (PHASE 1)  
FORTUNA 3B & 2 WEST END QTR  
ESTATE FORTUNA  
SAINT THOMAS, VI 00802

1. THE PURPOSE OF THIS PROJECT IS TO DEVELOP A PROPOSED SOLAR ENERGY FACILITY WITH BATTERIES STORAGE LOCATED ON 2 & 3B FORTUNA OF ESTATE FORTUNA.
2. ONCE THE SITE IS CLEARED TO CONDUCT INVESTIGATIONS, A PHASE 1 CULTURAL RESOURCE STUDY SHALL BE PERFORMED. A CONSULTANT IS ON BOARD TO PREPARE DOCUMENTATION THAT WILL MEET DPNR STANDARDS.
3. ALL LAND CLEARING SHALL BE COMPLETED WITH A LOW GROUND PRESSURE SKID STEER OR TRACK EXCAVATOR WITH A MULCHING ATTACHMENT TO REMOVE AND GRIND THE TREES AND VEGETATION WITHIN 2-INCHES OF THE EXISTING GROUND SURFACE. ALL ROOTS AND STUMPS SHALL REMAIN IN PLACE WITH NO SOIL DISTURBANCES.
4. THE CONSTRUCTION METHODS WILL PRESERVE ALL TOPSOIL AND WILL ALLOW THE ROOTS OF THE EXISTING VEGETATION TO REMAIN FOR SOIL STABILIZATION. IN AREAS OF TRENCHING FOR UNDERGROUND ELECTRICAL CONDUITS, THE SOIL WILL BE TEMPORARILY PLACED ADJACENT TO THE TRENCH UNTIL THE CONDUIT IS INSTALLED. THE TRENCHES WILL THEN BE BACKFILLED TO EXISTING GRADES, COMPACTED AND RE-VEGETATED.
5. THE MULCHED VEGETATION AND EXISTING ROOT STRUCTURES WILL PROVIDE THE NECESSARY EROSION AND SEDIMENT CONTROL.
6. NO MAJOR EARTH CHANGING ACTIVITIES ARE PROPOSED FOR THE PROJECT. ALL SOLAR RACKING WILL FOLLOW THE EXISTING TERRAIN. EROSION AND SEDIMENT CONTROL WILL BE IMPLEMENTED AS OUTLINED ABOVE.
7. EROSION CONTROL AND SEDIMENT CONTROL MEASURES SHALL BE INSPECTED ON A WEEKLY BASIS AND AFTER MAJOR STORM EVENTS. IF THE PROPOSED CONTROL MEASURES ARE INSUFFICIENT IN ANY AREAS A MULCH BERM WILL BE INSTALLED TO FOR EROSION AND SEDIMENT CONTROL.
8. THE EXISTING TERRAIN, STORMWATER FLOW PATHS AND GROUND COVER WILL NOT BE CHANGED BY THE CONSTRUCTION OF THIS PROJECT. CURRENTLY STORMWATER SHEET FLOWS SOUTH AND DISCHARGES INTO THE CARIBBEAN SEA. THE DEVELOPMENT OF THE SITE WILL RESULT IN A MINIMAL INCREASE IN IMPERVIOUS COVER FROM THE GROUND SCREWS, EIGHT PAD AND ACCESS DRIVEWAY AS THE AREA BELOW AND AROUND THE PANELS WILL REMAIN PERVIOUS WITH ESTABLISHED VEGETATION. THERE ARE MINIMAL CONCERNS WITH DOWNSTREAM FLOODING DUE TO THE SITE DISCHARGING INTO THE SEA; THEREFORE, NO INFILTRATION BASIN IS PROPOSED FOR RETENTION PURPOSES. PERMANENT ROCK BERM SERIES ARE PROPOSED IN AREAS ON-SITE WITH CONCENTRATED FLOW PATHS TO REDUCE PEAK RUNOFF RATES AND PREVENT EROSION.
9. THE SITE SHALL BE INSPECTED ON A WEEKLY BASIS AND AFTER ALL MAJOR STORM EVENTS. ANY DEFICIENCIES IN EROSION AND SEDIMENT CONTROL OR VEGETATION SHALL BE CORRECTED IN A TIMELY MANNER.
10. THERE IS NO PROPOSED WATER, SEWER OR LIGHTING AS PART OF THIS PROJECT.
11. ALL ITEMS TO BE DEMOLISHED SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR IN ACCORDANCE WITH ALL GOVERNING AGENCIES.

1. SURVEY AND STAKE LIMITS OF ALL WORK.
2. CONSTRUCT STABILIZED CONSTRUCTION ENTRANCES AS SHOWN ON PLANS.
3. INSTALL SILT FENCE (OR APPROVED EQUAL) PERIMETER EROSION CONTROL MEASURES.
4. CLEAR TREES, BRUSH AND VEGETATION WITHIN SECURITY FENCE AND AROUND THE PERIMETER AS SHOWN.
5. INSTALL 7' HIGH CHAINLINK SECURITY FENCING AND GATES AS SHOWN.
6. OBTAIN DPW DRIVEWAY PERMITS AND CONSTRUCT 20' WIDE GRAVEL ACCESS DRIVEWAYS AND TURNAROUND.
7. CONSTRUCT STORMWATER BASIN AND ROCK BERM(S).
8. INSTALL SOLAR RACKING SCREWS
9. CONSTRUCT SOLAR RACKING AND INSTALL SOLAR PANELS ON RACKING.
10. INSTALL UNDERGROUND CONDUIT, PV INVERTERS, EQUIPMENT PADS, BATTERIES AND POWER POLES.
11. APPLY GUINEA GRASS (MEGATHYRSUS MAXIMUS) SEED TO ANY DISTURBED VEGETATION AREAS THROUGHOUT THE SITE.

1. THE OWNER IN CONJUNCTION WITH THE CONTRACTOR (OPERATOR) NEEDS TO OBTAIN A CONSTRUCTION GENERAL PERMIT (CGP) FOR LARGE CONSTRUCTION ACTIVITIES (FIVE OR MORE ACRES) FROM THE ENVIRONMENTAL PROTECTION AGENCY (EPA), AS PART OF THE CGP, A STORM WATER NOTICE OF INTENT (NOI) WILL NEED TO BE SUBMITTED TO THE EPA AT LEAST 48 HOURS PRIOR TO COMMENCING CONSTRUCTION. THE NOI WILL NEED TO BE SUBMITTED TO STORM WATER NOTICE OF INTENT (4203M), USEPA, 1200 PENNSYLVANIA, AVE. NW, WASHINGTON, DC 20460.
2. THE CGP OUTLINES A SET OF PROVISIONS MANDATING THE OWNER AND CONTRACTOR COMPLY WITH THE REQUIREMENTS OF THE TERRITORIAL VIRGIN ISLANDS STORM WATER POLLUTION PREVENTION PLANS (VI SWPPP) STORM WATER REGULATIONS, INCLUDING BUT NOT LIMITED TO, STORM WATER POLLUTION PREVENTION PLANS (SWPPP'S), IMPLEMENTATION OR EROSION AND SEDIMENTATION CONTROLS, EQUIPMENT MAINTENANCE GUIDELINES, ETC. PLEASE CONTACT USEPA OFFICE OF WASTEWATER MANAGEMENT AT 202-564-9545 OR AT [WWW.EPA.GOV/NPDES/STORMWATER](http://WWW.EPA.GOV/NPDES/STORMWATER) FOR ADDITIONAL INFORMATION.

1. ALL EROSION CONTROL MEASURE SHALL CONFORM TO THE GUIDELINES AND REQUIREMENTS PROVIDED IN THE VIRGIN ISLANDS ENVIRONMENTAL PROTECTION HANDBOOK (VIEPH), 2022 EDITION. THE HANDBOOK MAY BE DOWNLOADED ONLINE OR PURCHASED FROM THE UNIVERSITY OF THE VIRGIN ISLANDS, COOPERATIVE EXTENSION SERVICE.
2. BEFORE ANY EARTH MOVING ACTIVITIES, AND THEREAFTER, EROSION CONTROL MEASURES ARE TO BE IMPLEMENTED AS NOTED. THE SMALLEST PRACTICAL AREA OF LAND (5 ACRES MAXIMUM) SHOULD BE EXPOSED AT ANY ONE TIME DURING DEVELOPMENT. WHEN LAND IS EXPOSED DURING DEVELOPMENT, THE EXPOSURE SHOULD BE KEPT UP TO A MAXIMUM OF 72 HOURS BEFORE APPLYING TEMPORARY OR PERMANENT EROSION CONTROL MEASURES. CONFINED PERIOD OF DISTURBED AND UNSTABILIZED SOILS TO A MAXIMUM OF FORTY-FIVE DAYS. ALL DITCHES AND SWALES ARE REQUIRED TO BE STABILIZED PRIOR TO DIRECT RECEIPT OF ANY FLOW.
3. REFER TO DWG C5 AND C6 FOR ADDITIONAL EROSION CONTROL NOTES AND DETAILS.



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**HOYLE  
TANNER**

95 E. Mitchell Hammock Road  
Suite 200  
Oviedo, FL 32765  
(407) 380-1919  
[www.hoyletanner.com](http://www.hoyletanner.com)

|                                                                                                                        |                                                                                                                                      |
|------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| <p>STF SOLAR, LLC<br/> A VIELECTROW LLC COMPANY<br/> 5000 ESTE. ENIGHED, STA 4A, PMB 146<br/> SAINT JOHN, VI 00830</p> | <p>PROPOSED SOLAR ENERGY FACILITY (PHASE 1)<br/> FORTUNA 3B &amp; 2 WEST END QTR<br/> ESTATE FORTUNA<br/> SAINT THOMAS, VI 00902</p> |
|------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|

## SITE PREP / EROSION CONTROL PLAN

C3

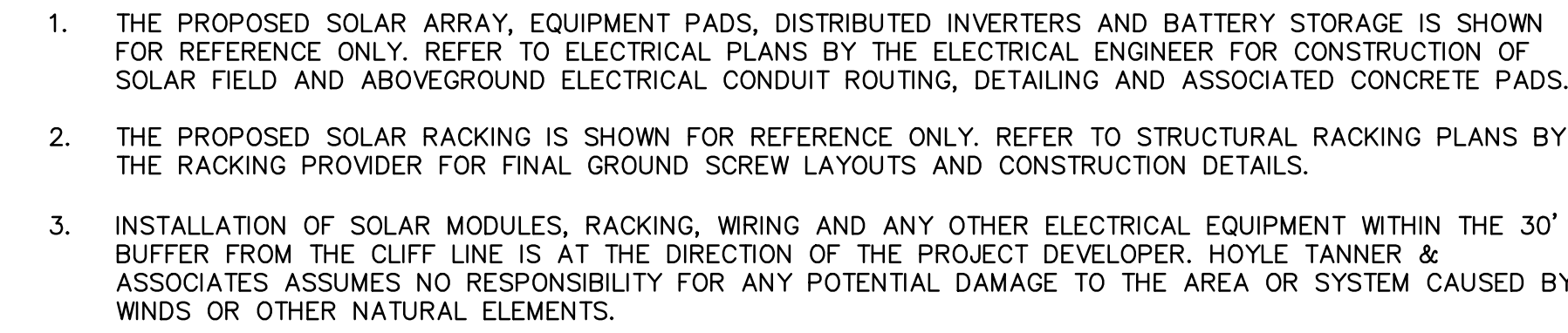
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PROJECT NO. 23.141001.00

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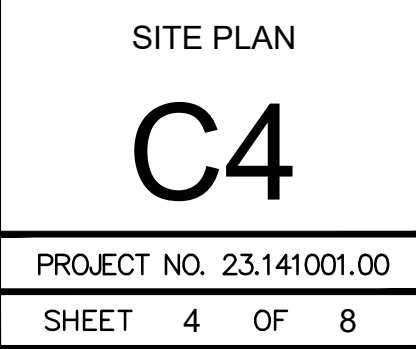
SHEET 3 OF 8

1. THE PURPOSE OF THIS PLAN IS TO DEPICT THE SITE DESIGN FOR A PROPOSED SOLAR ENERGY FACILITY WITH BATTERIES STORAGE LOCATED ON 2 & 3B FORTUNA OF ESTATE FORTUNA.
2. THE CONTRACTOR SHALL ABIDE BY ALL LOCAL, STATE, AND FEDERAL LAWS, RULES AND REGULATIONS WHICH APPLY TO THE CONSTRUCTION OF THESE IMPROVEMENTS, INCLUDING EPA REQUIREMENTS WITH RESPECT TO STORMWATER DISCHARGE.
3. THE CONTRACTOR IS RESPONSIBLE FOR ALL PERMITS, FEES, TEMPORARY UTILITIES AND COORDINATION WITH ALL AGENCIES IN OBTAINING ACCESS TO THE SITE AND PERFORMING ALL WORK REQUIRED FOR THIS PROJECT.
4. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL FIELD VERIFY THE HORIZONTAL AND VERTICAL LOCATIONS OF ALL POTENTIAL OBSTRUCTIONS INCLUDING ALL UNDERGROUND UTILITIES. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE OWNER OR ENGINEER SO THAT THE CONFLICT CAN BE RESOLVED WITH A MINIMUM AMOUNT OF DELAY. THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY UTILITIES FOUND INTERFERING WITH THE PROPOSED CONSTRUCTION AND APPROPRIATE REMEDIAL ACTION SHALL BE AGREED TO BY THE ENGINEER BEFORE PROCEEDING WITH THE WORK.
5. THE CONTRACTOR SHALL CONTACT "DIGSAFE" (DIAL 811) AT LEAST 72 HOURS BEFORE DIGGING.
6. WRITTEN DIMENSIONS HAVE PRECEDENCE OVER SCALED DIMENSIONS. THE CONTRACTOR SHALL USE CAUTION WHEN SCALING REPRODUCED PLANS. IN CASE OF CONFLICT BETWEEN THIS PLAN SET AND ANY OTHER DRAWING AND/OR SPECIFICATION, THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY FOR CLARIFICATIONS.
7. THE CONTRACTOR SHALL PERFORM ALL THE CLEARING AND GRUBBING NECESSARY WITHIN THE LIMITS OF THE PROJECT. ANY MANMADE SURFACE STRUCTURES WITHIN THESE LIMITS SHALL BE REMOVED AND DISPOSED OF PROPERLY IN ACCORDANCE WITH ALL GOVERNING AGENCIES.
8. THE CONTRACTOR SHALL PROTECT AND MAINTAIN EXISTING BENCHMARKS, BOUNDS AND PROPERTY CORNERS. ALL SURVEY MONUMENTS DESTROYED DURING CONSTRUCTION SHALL BE RESET BY A REGISTERED LAND SURVEYOR AT NO EXPENSE TO THE OWNER.
9. ANY AREAS OUTSIDE THE LIMITS OF WORK THAT ARE DISTURBED BY THE CONTRACTOR SHALL BE RESTORED TO THEIR ORIGINAL CONDITION AT NO EXPENSE TO THE OWNER.
10. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE ALL WORK IS COMPLETED IN ACCORDANCE WITH OSHA REQUIREMENTS.
11. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE ANY EXCAVATION SAFEGUARDS, NECESSARY BARRICADES, POLICE DETAILS, ETC., FOR TRAFFIC CONTROL AND SITE SAFETY. ALL EXCAVATIONS SHALL BE THOROUGHLY SECURED ON A DAILY BASIS BY THE CONTRACTOR AT THE COMPLETION OF CONSTRUCTION OPERATIONS.
12. THE CONTRACTOR IS RESPONSIBLE FOR THE MEANS AND METHODS OF CONSTRUCTION AND FOR THE CONDITIONS OF THE SITE.
13. IF REQUIRED, DEWATERING MUST BE EXECUTED IN ACCORDANCE WITH THE MOST CURRENT USM STANDARD SPECIFICATIONS UNLESS OTHERWISE NOTED.
14. CONTRACTOR TO FILE A NPDES CONSTRUCTION GENERAL PERMIT NOI PRIOR TO CONSTRUCTION BASED ON THE SWPPP PREPARED BY HOYLE TANNER AND ASSOCIATES, INC. AND THE CONTRACTOR SHALL PROVIDE MONITORING FOR THE SWPPP DURING CONSTRUCTION.
15. THE CONTRACTOR SHALL STABILIZE ANY AND ALL DITCHES, SWALES AND PONDS PRIOR TO DIRECTING STORMWATER RUN-OFF TO THEM.
16. ALL TEMPORARY EROSION CONTROL MEASURES SHALL BE REMOVED AFTER THE SITE HAS BEEN FULLY STABILIZED.
17. PROPOSED EARTH SLOPES SHALL NOT EXCEED 3 HORIZONTAL TO 1 VERTICAL UNLESS SHOWN OTHERWISE.
18. IN AREAS OF REGRADE, THE SUBGRADE SHALL BE LOOSENEED BY SCARIFYING TO A DEPTH OF AT LEAST 2-INCHES TO ENSURE BONDING OF THE TOPSOIL AND SUBSOIL.
19. FILL OR TOPSOIL SHALL NEITHER BE PLACED NOR COMPACTED WHILE IN A MUDDY CONDITION.
20. ALL AREAS DISTURBED BY THE CONTRACTOR'S OPERATIONS THAT DO NOT HAVE A SURFACE TREATMENT SPECIFICALLY SPECIFIED SHALL BE RESTORED TO A MINIMUM OF 4-INCHES OF TOPSOIL SEEDED WITH GUINEA GRASS (MEGATHYRSUS MAXIMUS), FERTILIZER, AND MULCH.
21. THE CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES OWNING UTILITIES, EITHER OVERHEAD OR UNDERGROUND, WITHIN THE CONSTRUCTION AREA AND SHALL COORDINATE WITH THE UTILITY COMPANIES FOR RELOCATING AND/OR SUPPORTING THEIR UTILITIES, IF REQUIRED, IN ACCORDANCE WITH THEIR SPECIFICATIONS.
22. THE CONTRACTOR SHALL MAINTAIN UTILITY SERVICES TO EXISTING FACILITIES AT ALL TIMES. IF ANY DISRUPTION MUST OCCUR, CONTRACTOR SHALL NOTIFY AND COORDINATE WITH UTILITY OWNER AT LEAST 72 HOURS IN ADVANCE.
23. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL EXISTING UTILITY LINES WITHIN THE CONSTRUCTION AREA. ANY DAMAGE TO EXISTING FACILITIES CAUSED BY CONSTRUCTION ACTIVITY SHALL BE REPAIRED OR REPLACED AT THE CONTRACTOR'S EXPENSE.
24. ALL PROPOSED SITE FEATURES SHALL BE LAID OUT IN THE FIELD USING SURVEY EQUIPMENT. AN AUTOCAD FILE OF THE EXISTING AND PROPOSED FEATURES WITH CONTROL POINTS WILL BE PROVIDED TO THE CONTRACTOR FOR CONSTRUCTION LAYOUT. THE LIMIT OF WORK SHALL BE CLEARLY MARKED IN THE FIELD BEFORE ANY WORK IS TO BEGIN ONSITE.
25. SYMBOLS AND LINETYPES MAY BE EXAGGERATED FOR CLARITY ON THESE DRAWINGS DUE TO THE SCALE. THE CONTRACTOR SHALL ADJUST ACCORDINGLY DURING CONSTRUCTION LAYOUT.
26. ADDITIONAL UNDERGROUND ELECTRICAL CONDUITS BETWEEN PANELS, TRANSFORMERS, CENTRAL INVERTERS AND UTILITY POLES MAY BE PROPOSED AND ARE NOT SHOWN ON THESE DRAWINGS FOR CLARITY. FINAL PANEL CONFIGURATION AND ELECTRICAL ROUTING MAY VARY FROM THESE PLANS. REFER TO ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION.
27. THE CONTRACTOR SHALL BACKFILL, COMPACT AND SEED ALL TRENCHING FOR UNDERGROUND ELECTRICAL ROUTING ON A DAILY BASIS AND MINIMIZE GROUND DISTURBANCES DURING CONSTRUCTION.
28. NO HERBICIDES, PESTICIDES OR CLEANERS SHALL BE USED ONSITE.
29. A GLINT & GLARE STUDY FOR THE PANELS IN RELATION TO THE CONTROL TOWER AT HENRY E. ROHLSEN AIRPORT WAS COMPLETED PER FAA STANDARDS BY DARE STRATEGIES, LLC. THE STUDY SHOWS NO GLARE WILL BE PRODUCED AT ANY TIME THROUGHOUT THE YEAR IF THE SOLAR FIELD IS ROTATED 195° AND RESULTED IN A "PASS" FOR THE PROJECT.



|                   |                                                                                                                       |
|-------------------|-----------------------------------------------------------------------------------------------------------------------|
| OWNERS OF RECORD: | PARCEL 2<br>DOWLING WILLIAM JR. TRUSTEE<br>90 BROAD STREET<br>NEW YORK, NY 10004                                      |
|                   | PARCEL 3B<br>SEAVIEW INC. - LINDBERG BAY<br>90 BROAD STREET<br>NEW YORK, NY 10004                                     |
| PARCEL:           | NO. 2 & 3B FORTUNA<br>ESTATE FORTUNA<br>SAINT THOMAS, VI 00802                                                        |
| PROPERTY ID:      | 102404046300; 104901013400                                                                                            |
| OLG MAP NUMBER:   | D9-27-T51; D9-209-T59                                                                                                 |
| ZONING DISTRICT:  | R-2 RESIDENTIAL ZONE                                                                                                  |
| PARCEL AREA:      | 9,173,736± SF / 210.6± AC (TOTAL)<br><br>5,540,832± SF / 127.2± AC (PARCEL 2)<br>3,632,904± SF / 83.4± AC (PARCEL 3B) |
| LOT DENSITY:      | NO DWELLINGS                                                                                                          |
| LOT OCCUPANCY:    | NO DWELLINGS                                                                                                          |
| LOT COVERAGE:     | EQUIP. PAD/SCREWS = APPROX. 7,500 SF<br>(PHASE 1)                                                                     |

| LEGEND |                             |
|--------|-----------------------------|
|        | SUBJECT PROPERTY LINE       |
|        | ABUTTER PROPERTY LINE       |
|        | STRUCTURE SETBACK           |
|        | FLOOD ZONE LINE             |
|        | LIMITS OF C2M TIER 1 PERMIT |
|        | EX. MINOR CONTOUR           |
|        | EX. MAJOR CONTOUR           |
|        | LOCATED WATER LINE          |
|        | SUBDIVIDED PROPERTY LINE    |
|        | APPROXIMATE, PHASE 2 LIMITS |
|        | OVERHEAD ELECTRIC           |
|        | UTILITY POLE W/ GUY         |
|        | PROPOSED SECURITY FENCE     |
|        | LIMIT OF MULCHING           |
|        | DISTRICT ZONING LINE        |
|        | DRAINAGE FLOW               |
|        | SOLAR MODULES               |
|        | BATTERY STORAGE             |
|        | EQUIPMENT PAD               |
|        | ACCESS DRIVEWAY             |

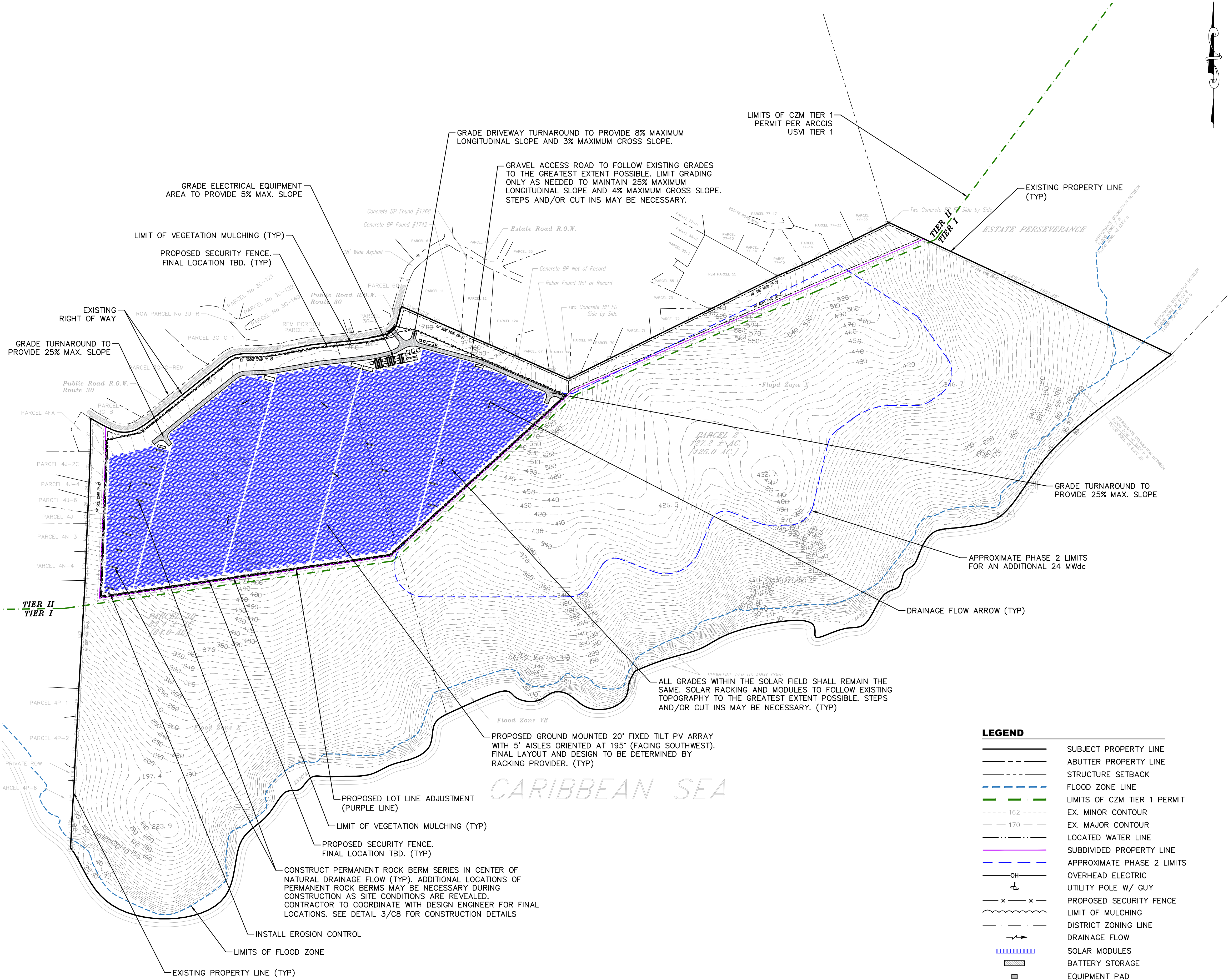


GRADING NOTES

- THE PURPOSE OF THIS PLAN IS TO DEPICT THE PROPOSED SITE GRADING FOR A SOLAR FACILITY WITH BATTERY STORAGE LOCATED AT PARCEL NO. 2 & 3B ESTATE FORTUNA.
- LAYOUT ALL WORK, ESTABLISH GRADES, LOCATE EXISTING UNDERGROUND UTILITIES, SET NECESSARY MARKERS AND STAKE AND SET UP NECESSARY BARRICADES AND PROTECTION FACILITIES PRIOR TO THE BEGINNING OF ANY GRADING, EXCAVATION OR TRENCHING OPERATIONS.
- IN AREAS OF GRADING, THE SUBGRADE SHALL BE LOOSENED BY SCARIFYING TO A DEPTH OF AT LEAST 2" TO ENSURE BONDING OF THE TOPSOIL AND SUBSOIL.
- AREAS OF EXCAVATION ACTIVITIES SHALL BE RESTORED TO A MINIMUM OF 4" OF SEEDED TOPSOIL, FERTILIZER, AND MULCH.
- CONTRACTOR'S WORK INCLUDES, BUT IS NOT LIMITED TO, PROVIDING ALL LABOR, MATERIALS, EQUIPMENT, SUPERVISION, QUALITY CONTROL, AND INCIDENTALS NECESSARY TO EXCAVATE, DEWATER AND CONTROL SURFACE WATER, BACKFILL, CONDUCT COMPACTION AND TESTING OF MATERIALS, ROUGH GRADE, AND REMOVE SEDIMENT AND SOIL AND OTHER SUBSURFACE MATERIALS IN ACCORDANCE WITH THE DESIGN DOCUMENTS, APPLICABLE LAW, APPLICABLE PERMITS, AND PROJECT AGREEMENTS.
- ALL STAKING AND LAYOUT WORK REQUIRED FOR WORK INCLUDED UNDER THIS SECTION SHALL BE THE RESPONSIBILITY OF CONTRACTOR. CONTRACTOR SHALL ESTABLISH ALL REFERENCE POINTS, LAY OUT THE WORK, AND BE RESPONSIBLE FOR ALL LINES, ELEVATIONS, MEASUREMENTS AND OTHER GRADING OPERATIONS.
- UNIFORMLY GRADE AREAS WITHIN SPECIFIED LIMITS, INCLUDING ADJACENT TRANSITIONS. SMOOTH FINISHED SURFACES WITHIN SPECIFIED TOLERANCES, COMPACT WITH UNIFORM LEVELS OR SLOPES BETWEEN POINTS INDICATED, IN DESIGN DOCUMENTS.
- PERCENTAGES OF MAXIMUM DENSITY REQUIREMENTS: COMPACT TO THE PERCENTAGES OF MAXIMUM DENSITY, DETERMINED IN ACCORDANCE WITH ASTM D1557 AND DESIGN DOCUMENTS.
  - GRAVEL DRIVEWAY: COMPACT TOP 8 INCHES OF SUBGRADE AND EACH LAYER OF FILL MATERIAL AT 95 PERCENT MAXIMUM DENSITY OR AS REQUIRED.
  - LANDSCAPE AREAS: COMPACT TOP 6 INCHES OF SUBGRADE AND EACH LAYER OF FILL MATERIAL AT 85 PERCENT MAXIMUM DENSITY, OR AS REQUIRED.
  - EQUIPMENT PADS: THE UPPER 12 INCHES OF SUBGRADE SHALL BE COMPACTED TO 95 PERCENT RELATIVE COMPACTION, OR AS REQUIRED.
- MATERIAL DISPOSAL AND STORAGE SITES
  - SUITABLE EXCAVATED MATERIALS MAY BE STOCKPILED AND RE-USED IN SYSTEM CONSTRUCTION.
  - DISPOSE OF UNSUITABLE OR EXCESS EXCAVATED AND WASTE MATERIALS IN ACCORDANCE WITH APPLICABLE LAW AND APPLICABLE PERMITS.
  - CONTRACTOR STOCKPILE AND LAYDOWN AREAS SHALL BE DEVELOPED AND MAINTAINED IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONSTRUCTION DESIGN DOCUMENTS.
- EMBANKMENTS AND BACKFILL SURROUNDING STRUCTURES SHALL BE COMPACTED TO A MINIMUM OF 95 PERCENT.
- EARTH SLOPES SHALL NOT EXCEED 3 HORIZONTAL TO 1 VERTICAL UNLESS SHOWN OTHERWISE.
- CUT INS AND STEPS ALONG THE STEEP SLOPES MAY BE REQUIRED AND WILL BE CONSTRUCTED ONLY ON AN AS NEEDED BASIS TO INSTALL THE SOLAR SYSTEM TO REDUCE THE OVERALL GROUND DISTURBANCE.

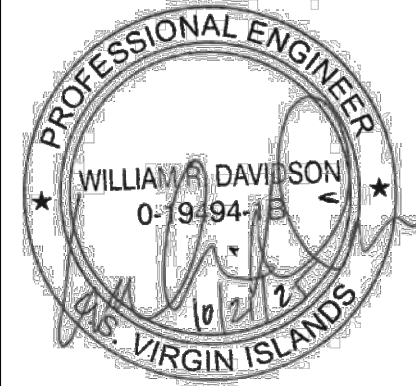
EROSION CONTROL NOTES:

- REFER TO DWG C6 FOR ADDITIONAL EROSION CONTROL NOTES AND DETAILS.
- ADDITIONAL EROSION CONTROL MAY BE REQUIRED DEPENDING ON ACTUAL SITE CONDITIONS AND CONSTRUCTION METHODS. THE CONTRACTOR IS RESPONSIBLE FOR IMPLEMENTING ALL EROSION AND SEDIMENT CONTROL DEVICES NEEDED TO PREVENT RUNOFF TO THE COAST AND OFFSITE.
- THE CONTRACTOR SHALL STABILIZE ANY AND ALL DITCHES AND SWALES PRIOR TO DIRECTING STORMWATER RUN-OFF TO THEM.
- ACCESS DRIVEWAYS MUST BE STABILIZED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
- EROSION CONTROL MEASURES ARE TO BE INSPECTED WEEKLY AND AFTER EVERY 0.25" OF RAINFALL WITHIN A 24 HOUR PERIOD.
- UNSTABILIZED AREAS SHALL BE TEMPORARILY STABILIZED WITHIN 72 HOURS OF FINAL GRADING, OR PRIOR TO A 0.25" STORM OCCURING AFTER THE DISTURBANCE, WHICHEVER OCCURS SOONER.
- TEMPORARY STABILIZATION MEASURES MUST REMAIN IN PLACE THROUGH ALL CONSTRUCTION PHASES, UNTIL THE SITE IS PERMANENTLY STABILIZED.
- THE SITE SHALL BE STABILIZED BY ESTABLISHING AT LEAST 95% VEGETATIVE COVER UNIFORMLY DISTRIBUTED, INCLUDING UNDER THE PANELS.
- PROVIDE EROSION CONTROL MATTING ON ALL 3:1 OR GREATER SLOPES.
- ALL TEMPORARY EROSION CONTROL MEASURES SHALL BE REMOVED AFTER THE SITE HAS BEEN STABILIZED.



LEGEND

- |  |                             |
|--|-----------------------------|
|  | SUBJECT PROPERTY LINE       |
|  | ABUTTER PROPERTY LINE       |
|  | STRUCTURE SETBACK           |
|  | FLOOD ZONE LINE             |
|  | LIMITS OF CZM TIER 1 PERMIT |
|  | EX. MINOR CONTOUR           |
|  | EX. MAJOR CONTOUR           |
|  | LOCATED WATER LINE          |
|  | SUBDIVIDED PROPERTY LINE    |
|  | APPROXIMATE PHASE 2 LIMITS  |
|  | OVERHEAD ELECTRIC           |
|  | UTILITY POLE W/ GUY         |
|  | PROPOSED SECURITY FENCE     |
|  | LIMIT OF MULCHING           |
|  | DISTRICT ZONING LINE        |
|  | DRAINAGE FLOW               |
|  | SOLAR MODULES               |
|  | BATTERY STORAGE             |
|  | EQUIPMENT PAD               |
|  | ACCESS DRIVEWAY             |
|  | PERMANENT ROCK BERM         |



| NO. | REVISION DESCRIPTION                                    | DATE     |
|-----|---------------------------------------------------------|----------|
| 1   | ISSUED FOR DPNR & DPW PERMITTING - NOT FOR CONSTRUCTION | 10/15/25 |
| 2   | ISSUED FOR DPNR STT CZM COMMITTEE REVIEW AND APPROVAL   | 10/30/25 |

|                                                                                                                                                                                                                                                                                                      |                    |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|
| THIS DOCUMENT IS PREPARED AS A SERVICE AND THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS. IT IS NOT TO BE USED, REPRODUCED, DISSEMINATED OR TRANSMITTED IN ANY MANNER, OR FOR ANY OTHER PURPOSE THAN THE PROJECT, WITHOUT THE WRITTEN PERMISSION OF HOYLE, TANNER. | CHECKED BY<br>WRD  |
| DRAWN BY<br>SES                                                                                                                                                                                                                                                                                      | DESIGNED BY<br>SES |

95 E. Mitchell-Hamrick Road  
Oviedo, FL 32765  
(407) 380-1919  
www.hoyletanner.com

**HOYLE  
TANNER**

SCALE: AS SHOWN

DATE: SEPTEMBER 5, 2024

|                                                                                                                       |                                                                                                                                |
|-----------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| APPLICANT<br>STF SOLAR, LLC<br>A VIELECTRON, LLC COMPANY<br>5000 EAST ENGLISH ST. 4A, PMB 146<br>SAINT JOHN, VI 00830 | PROJECT<br>PROPOSED SOLAR ENERGY FACILITY (PHASE 1)<br>FORTUNA 3B & 2 WEST END QTR<br>ESTATE FORTUNA<br>SAINT THOMAS, VI 00802 |
|-----------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|

GRADING & DRAINAGE PLAN

**C5**

PROJECT NO. 23.141001.00

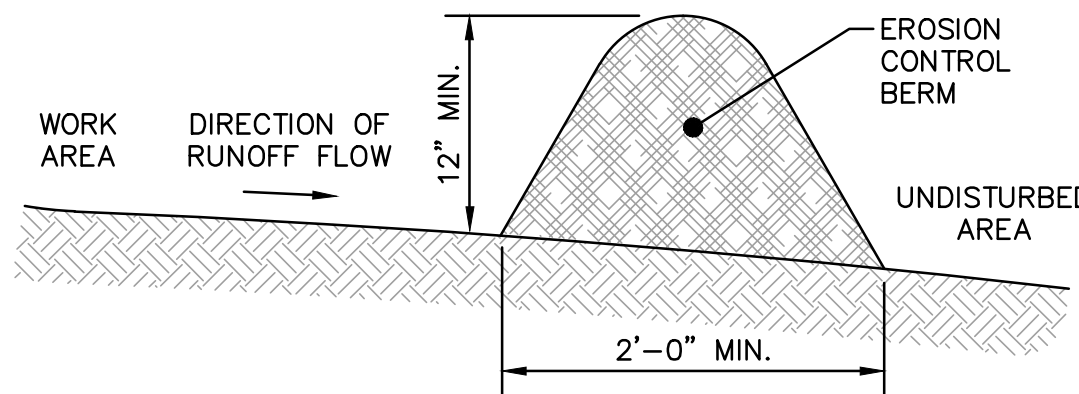
SHEET 5 OF 8

EROSION CONTROL NOTES:

- POLLUTION PREVENTION.** MINIMIZE DISTURBED AREAS AND PROTECT NATURAL DOWNGRAIDENT BUFFER AREAS TO THE EXTENT PRACTICABLE. CONTROL STORMWATER VOLUME AND VELOCITY WITHIN THE SITE TO MINIMIZE SOIL EROSION. MINIMIZE THE DISTURBANCE OF STEEP SLOPES. CONTROL STORMWATER DISCHARGES, INCLUDING BOTH PEAK FLOW RATES AND VOLUME, TO MINIMIZE EROSION AT OUTLETS. THE DISCHARGE MAY NOT RESULT IN EROSION OF ANY OPEN DRAINAGE CHANNELS, SWALES, STREAM CHANNELS OR STREAM BANKS, UPLAND, OR COASTAL OR FRESHWATER WETLANDS OFF THE PROJECT SITE. WHENEVER PRACTICABLE, NO DISTURBANCE ACTIVITIES SHOULD TAKE PLACE WITHIN 25 FEET OF ANY PROTECTED NATURAL RESOURCE. IF DISTURBANCE ACTIVITIES TAKE PLACE LESS THAN 25 FEET FROM ANY PROTECTED NATURAL RESOURCE, AND STORMWATER DISCHARGES THROUGH THE DISTURBED AREAS TOWARD THE PROTECTED NATURAL RESOURCE, PERIMETER EROSION CONTROLS MUST BE DOUBLED AND DISTURBED AREAS MUST BE TEMPORARILY OR PERMANENTLY STABILIZED WITHIN 7 DAYS.
- SEDIMENT BARRIERS.** PRIOR TO CONSTRUCTION, PROPERLY INSTALL SEDIMENT BARRIERS AT THE DOWNGRAIDENT EDGE OF ANY AREA TO BE DISTURBED AND ADJACENT TO ANY DRAINAGE CHANNELS WITHIN THE DISTURBED AREA. SEDIMENT BARRIERS SHOULD BE INSTALLED DOWNGRAIDENT OF SOIL OR SEDIMENT STOCKPILES AND STORMWATER PREVENTED FROM RUNNING ONTO THE STOCKPILE. MAINTAIN THE SEDIMENT BARRIERS BY REMOVING ACCUMULATED SEDIMENT, OR REMOVING AND REPLACING THE BARRIER, UNTIL THE DISTURBED AREA IS PERMANENTLY STABILIZED. WHERE A DISCHARGE TO A STORM DRAIN INLET OCCURS, IF THE STORM DRAIN CARRIES WATER DIRECTLY TO A SURFACE WATER AND YOU HAVE AUTHORITY TO ACCESS THE STORM DRAIN INLET, YOU MUST INSTALL AND MAINTAIN PROTECTION MEASURES THAT REMOVE SEDIMENT FROM THE DISCHARGE.
- STABILIZED CONSTRUCTION ENTRANCE.** PRIOR TO CONSTRUCTION, PROPERLY INSTALL A STABILIZED CONSTRUCTION ENTRANCE (SCE) AT ALL POINTS OF EGRESS FROM THE SITE. THE SCE IS A STABILIZED PAD OF AGGREGATE, UNDERLAIN BY A GEOTEXTILE FILTER FABRIC, USED TO PREVENT TRAFFIC FROM TRACKING MATERIAL AWAY FROM THE SITE ONTO PUBLIC ROWS. MAINTAIN THE SCE UNTIL ALL DISTURBED AREAS ARE STABILIZED.
- TEMPORARY STABILIZATION.** WITHIN 7 DAYS OF THE CESSATION OF CONSTRUCTION ACTIVITIES IN AN AREA THAT WILL NOT BE WORKED FOR MORE THAN 7 DAYS, STABILIZE ANY EXPOSED SOIL WITH MULCH, OR OTHER NON-ERODIBLE COVER. STABILIZE AREAS WITHIN 75 FEET OF A NATURAL RESOURCE WITHIN 48 HOURS OF THE INITIAL DISTURBANCE OF THE SOIL OR PRIOR TO ANY STORM EVENT, WHICHEVER COMES FIRST.
- REMOVAL OF TEMPORARY MEASURES.** REMOVE ANY TEMPORARY CONTROL MEASURES, SUCH AS MULCH BERMS OR SILT SOCKS, WITHIN 30 DAYS AFTER PERMANENT STABILIZATION IS ATTAINED. REMOVE ANY ACCUMULATED SEDIMENTS AND STABILIZE.
- PERMANENT STABILIZATION.** IF THE AREA WILL NOT BE WORKED FOR MORE THAN ONE YEAR OR HAS BEEN BROUGHT TO FINAL GRADE, THEN PERMANENTLY STABILIZE THE AREA WITHIN 7 DAYS BY PLANTING VEGETATION, SEEDING, OR THROUGH THE USE OF PERMANENT MULCH, OR RIP-RAP, OR ROAD SUB-BASE. IF USING VEGETATION FOR STABILIZATION, SELECT THE PROPER VEGETATION FOR THE LIGHT, MOISTURE, AND SOIL CONDITIONS; AMEND AREAS OF DISTURBED SUBSOILS WITH TOPSOIL OR COMPOST; PROTECT SEEDED AREAS WITH MULCH OR, IF NECESSARY, EROSION CONTROL BLANKETS; AND SCHEDULE PLANTING, AND SEEDING SO TO AVOID DIE-OFF FROM DROUGHT. NEWLY SEEDED AREAS MUST BE PROTECTED FROM VEHICLE TRAFFIC, EXCESSIVE PEDESTRIAN TRAFFIC, AND CONCENTRATED RUNOFF UNTIL THE VEGETATION IS WELL-ESTABLISHED WITH 90% COVER BY HEALTHY VEGETATION. IF NECESSARY, AREAS MUST BE REWORKED AND RESTABILIZED IF GERMINATION IS SPARSE, PLANT COVERAGE IS SPOTTY, OR TOPSOIL EROSION IS EVIDENT. ONE OR MORE OF THE FOLLOWING MAY APPLY TO A PARTICULAR SITE.
  - PERMANENT MULCH.** FOR MULCHED AREAS, PERMANENT MULCHING MEANS TOTAL COVERAGE OF THE EXPOSED AREA WITH AN APPROVED MULCH MATERIAL. MULCH FROM TREE GRINDINGS MAY BE USED AS EROSION CONTROL FOR PERMANENT STABILIZATION. THE MULCH MIX AND COVERAGE SHALL BE REVIEWED AND APPROVED BY THE DESIGN ENGINEER PRIOR TO BEING DETERMINED AS STABILIZED.
  - RIP-RAP.** FOR AREAS STABILIZED WITH RIP-RAP, PERMANENT STABILIZATION MEANS THAT SLOPES STABILIZED WITH RIP-RAP HAVE AN APPROPRIATE BACKING OF A WELL-GRADED GRAVEL OR APPROVED GEOTEXTILE TO PREVENT SOIL MOVEMENT FROM BEHIND THE RIP-RAP. STONE MUST BE SIZED APPROPRIATELY. ANGULAR STONE SHALL BE USED.
- STORMWATER CHANNELS.** DITCHES, SWALES, AND OTHER OPEN STORMWATER CHANNELS MUST BE DESIGNED, CONSTRUCTED, AND STABILIZED USING MEASURES THAT ACHIEVE LONG-TERM EROSION CONTROL. DITCHES, SWALES AND OTHER OPEN STORMWATER CHANNELS MUST BE SIZED TO HANDLE, AT A MINIMUM, THE EXPECTED VOLUME RUN-OFF. EACH CHANNEL SHOULD BE CONSTRUCTED IN SECTIONS SO THAT THE SECTION'S GRADING, SHAPING, AND INSTALLATION OF THE PERMANENT LINING CAN BE COMPLETED THE SAME DAY. IF A CHANNEL'S FINAL GRADING OR LINING INSTALLATION MUST BE DELAYED, THEN DIVERSION BERMS MUST BE USED TO DIVERT STORMWATER AWAY FROM THE CHANNEL, PROPERLY-SPACED CHECK DAMS MUST BE INSTALLED IN THE CHANNEL TO SLOW THE WATER VELOCITY, AND A TEMPORARY LINING INSTALLED ALONG THE CHANNEL TO PREVENT SCOURING.
  - THE CHANNEL SHOULD RECEIVE ADEQUATE ROUTINE MAINTENANCE TO MAINTAIN CAPACITY AND PREVENT OR CORRECT ANY EROSION OF THE CHANNEL'S BOTTOM OR SIDE SLOPES.
  - WHEN THE WATERSHED DRAINING TO A DITCH OR SWALE IS LESS THAN 1 ACRE OF TOTAL DRAINAGE AND LESS THAN ¼ ACRE OF IMPERVIOUS AREA, DIVERSION OF RUNOFF TO ADJACENT WOODED OR OTHERWISE VEGETATED BUFFER AREAS IS ENCOURAGED WHERE THE OPPORTUNITY EXISTS.
- SEDIMENT BASINS.** SEDIMENT BASINS MUST BE DESIGNED TO PROVIDE STORAGE FOR EITHER THE CALCULATED RUNOFF FROM A 1-YEAR, 24-HOUR STORM OR PROVIDE FOR 3,600 CUBIC FEET OF CAPACITY PER ACRE DRAINING TO THE BASIN. OUTLET STRUCTURES MUST DISCHARGE WATER FROM THE SURFACE OF THE BASIN WHENEVER POSSIBLE. EROSION CONTROLS AND VELOCITY DISSIPATION DEVICES MUST BE USED IF THE DISCHARGING WATERS ARE LIKELY TO CREATE EROSION. ACCUMULATED SEDIMENT MUST BE REMOVED AS NEEDED FROM THE BASIN TO MAINTAIN AT LEAST ½ OF THE DESIGN CAPACITY OF THE BASIN.
- ROADS.** GRAVEL AND PAVED ROADS MUST BE DESIGNED AND CONSTRUCTED WITH CROWNS OR OTHER MEASURES, SUCH AS WATER BARS, TO ENSURE THAT STORMWATER IS DELIVERED IMMEDIATELY TO ADJACENT STABLE DITCHES, VEGETATED BUFFER AREAS, CATCH BASIN INLETS, OR STREET GUTTERS.
- CULVERTS.** CULVERTS MUST BE SIZED TO AVOID UNINTENDED FLOODING OF UPSTREAM AREAS OR FREQUENT OVERTOPPING OF ROADWAYS. CULVERT INLETS MUST BE PROTECTED WITH APPROPRIATE MATERIALS FOR THE EXPECTED ENTRANCE VELOCITY, AND PROTECTION MUST EXTEND AT LEAST AS HIGH AS THE EXPECTED MAXIMUM ELEVATION OF STORAGE BEHIND THE CULVERT. CULVERT OUTLET DESIGN MUST INCORPORATE MEASURES, SUCH AS APRONS, TO PREVENT SCOUR OF THE STREAM CHANNEL. OUTLET PROTECTION MEASURES MUST BE DESIGNED TO STAY WITHIN THE CHANNEL LIMITS. THE DESIGN MUST TAKE ACCOUNT OF TAILWATER DEPTH.
- PARKING AREAS.** PARKING AREAS MUST BE CONSTRUCTED TO ENSURE RUNOFF IS DELIVERED TO ADJACENT SWALES, CATCH BASINS, CURB GUTTERS, OR BUFFER AREAS WITHOUT ERODING AREAS DOWNSLOPE. THE PARKING AREA'S SUB-BASE COMPACTION AND GRADING MUST BE DONE TO ENSURE RUNOFF IS EVENLY DISTRIBUTED TO ADJACENT BUFFERS OR SIDE SLOPES. CATCH BASINS MUST BE LOCATED AND SET TO PROVIDE ENOUGH STORAGE DEPTH AT THE INLET TO ALLOW INFLOW OF PEAK RUNOFF RATES WITHOUT BY-PASS OF RUNOFF TO OTHER AREAS.

EROSION CONTROL BERM NOTES:

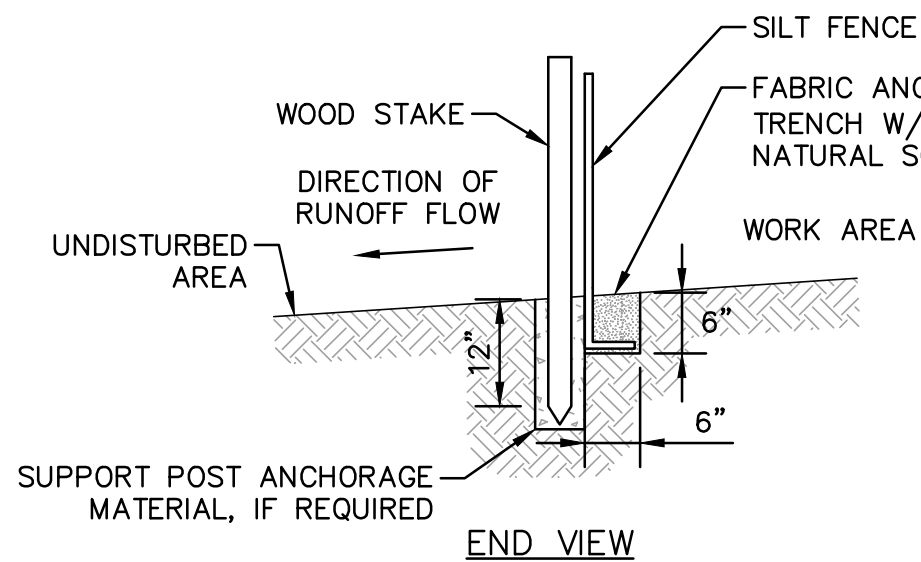
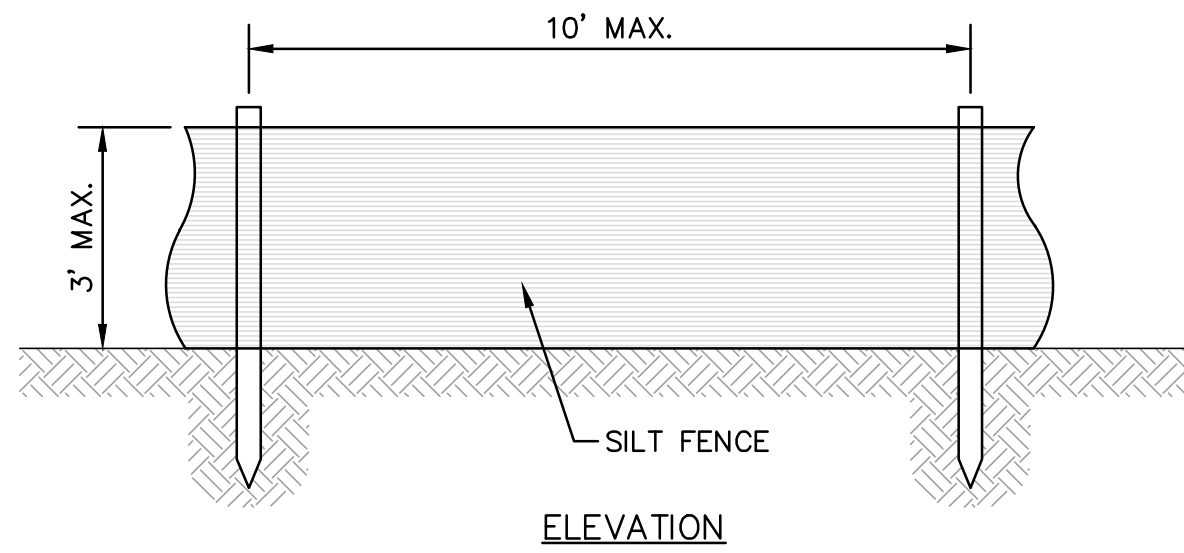
- EROSION CONTROL BERM MAY BE USED BY THE CONTRACTOR AS AN APPROVED EQUAL TO THE PROPOSED SILT FENCE FOR PERIMETER EROSION CONTROL.
- THE BERM SHALL BE CONSTRUCTED FROM STUMP AND VEGETATION GRINDINGS. THE SOIL WITHIN THE ROOT BALL SHALL REMAIN WHEN GROUND TO ADD STRUCTURE TO THE MEDIA.
- THE BERM SHALL BE CONSTRUCTED BY HAND, MACHINERY OR PNEUMATIC BLOWER.
- TALL GRASS, BRUSH OR WOODY VEGETATION SHALL BE CUT OR REMOVED PRIOR TO INSTALLATION TO AVOID VOIDS AND BRIDGES THAT WOULD ALLOW FINE SOIL PARTICLES TO WASH AWAY.
- THE BERM SHALL BE A MINIMUM OF 12 INCHES HIGH AND A MINIMUM OF TWO FEET WIDE. ON LONGER STEEPER SLOPES, THE BERM SHALL BE HIGHER AND WIDER.



- THE CHANNEL SHOULD RECEIVE ADEQUATE ROUTINE MAINTENANCE TO MAINTAIN CAPACITY AND PREVENT OR CORRECT ANY EROSION OF THE CHANNEL'S BOTTOM OR SIDE SLOPES.
  - WHEN THE WATERSHED DRAINING TO A DITCH OR SWALE IS LESS THAN 1 ACRE OF TOTAL DRAINAGE AND LESS THAN ¼ ACRE OF IMPERVIOUS AREA, DIVERSION OF RUNOFF TO ADJACENT WOODED OR OTHERWISE VEGETATED BUFFER AREAS IS ENCOURAGED WHERE THE OPPORTUNITY EXISTS.
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  - PARKING AREAS.** PARKING AREAS MUST BE CONSTRUCTED TO ENSURE RUNOFF IS DELIVERED TO ADJACENT SWALES, CATCH BASINS, CURB GUTTERS, OR BUFFER AREAS WITHOUT ERODING AREAS DOWNSLOPE. THE PARKING AREA'S SUB-BASE COMPACTION AND GRADING MUST BE DONE TO ENSURE RUNOFF IS EVENLY DISTRIBUTED TO ADJACENT BUFFERS OR SIDE SLOPES. CATCH BASINS MUST BE LOCATED AND SET TO PROVIDE ENOUGH STORAGE DEPTH AT THE INLET TO ALLOW INFLOW OF PEAK RUNOFF RATES WITHOUT BY-PASS OF RUNOFF TO OTHER AREAS.

2 C6 STABILIZED CONSTRUCTION ENTRANCE/EXIT DETAIL

SCALE: NONE

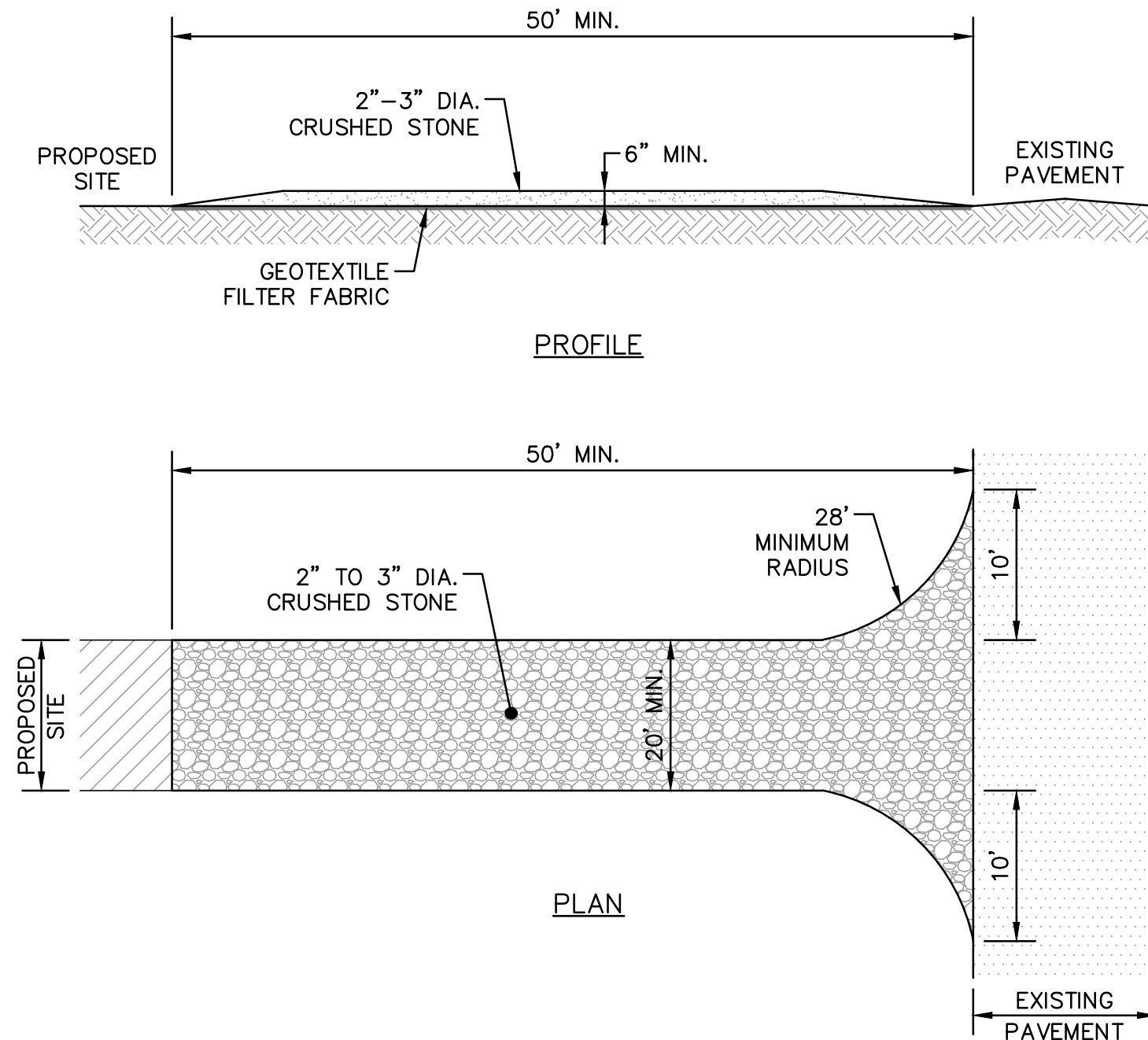


SILT FENCE NOTES:

- SPACING OF FENCE POSTS NOT TO EXCEED 10'-0".
- SILT FENCE SHALL BE INSTALLED BEFORE ANY EARTH REMOVAL OR EXCAVATION TAKES PLACE.
- FILTER FABRIC TO BE FASTENED SECURELY TO POSTS WITH WIRE TIES OR STAPLES AT TOP, MIDPOINT AND BOTTOM.
- OVERLAP BY 6". FOLD AND STAPLE ADJOINING SECTIONS OF FILTER FABRIC.
- MAINTENANCE SHALL BE PERFORMED AS NEEDED, AND THE MATERIAL REMOVED WHEN "BULGES" DEVELOP. DO NOT DEPOSIT THE MATERIAL NEAR WETLANDS OR WATERCOURSES.
- FILTER FABRIC SHALL BE ENTRENCHED 6" MINIMUM BELOW EXISTING OR FINISHED GRADE.

3 C6 SILT FENCE EROSION CONTROL DETAIL

SCALE: NONE

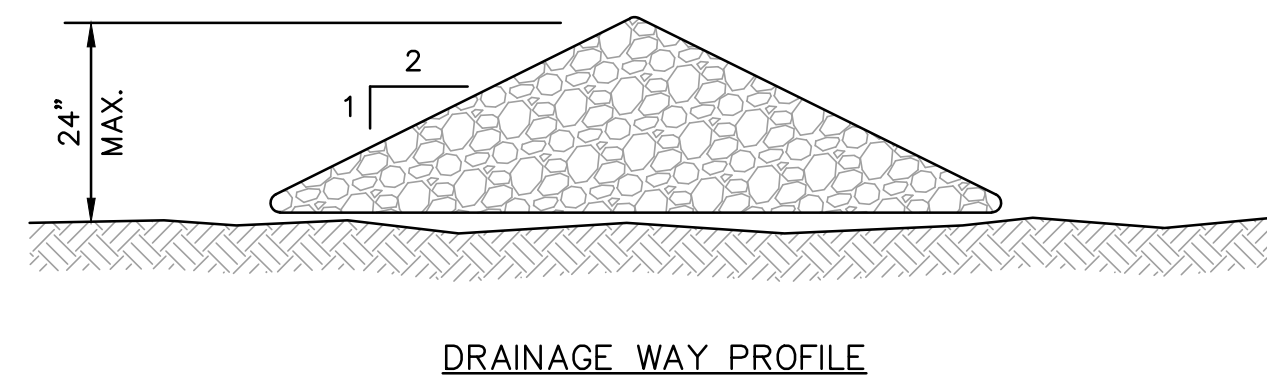
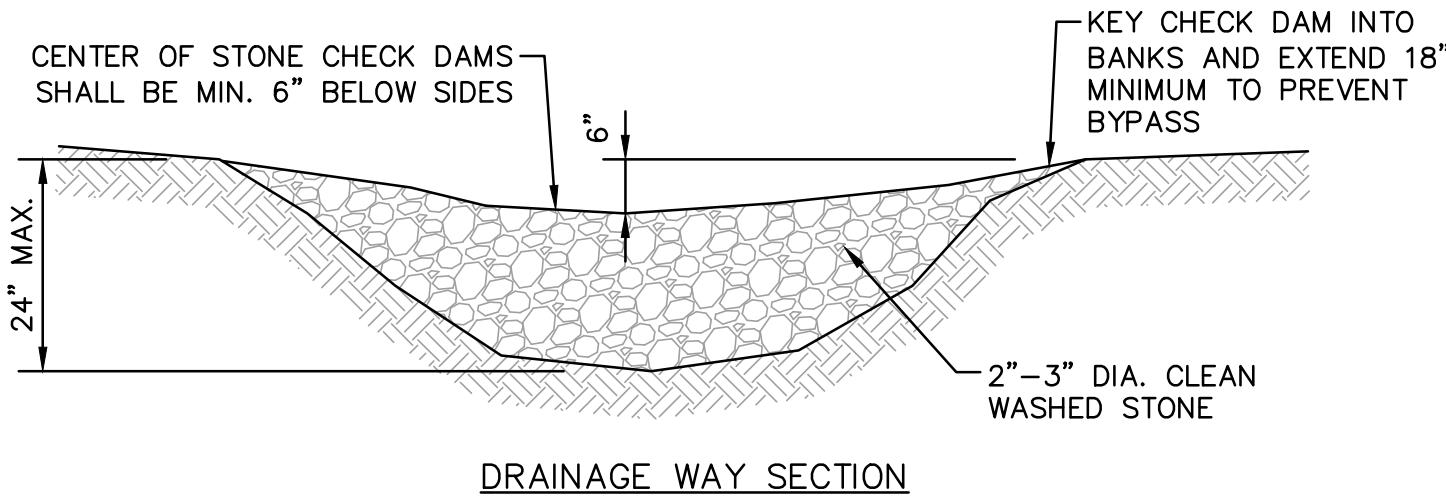


STABILIZED CONSTRUCTION ENTRANCE/EXIT NOTES:

- CONSTRUCT PAD AT THE SITE ENTRANCE(S) AS SHOWN ON THE PLANS.
- THE ENTRANCE/EXIT PAD SHALL BE A MINIMUM OF 50 FEET LONG AND 20 FT WIDE.
- THE PAD SHALL BE A MINIMUM OF 6 INCHES THICK WITH 2-3 INCH ANGULAR AGGREGATE.
- THE AGGREGATE SHALL BE PLACED OVER A GEOTEXTILE FABRIC TO PREVENT STONES FROM PUSHING INTO NATIVE SOIL.
- THE PAD SHALL BE INSPECTED WEEKLY AND BEFORE AND AFTER EACH STORM. THE PAD SHALL BE REPLACED IF THE VOIDS BECOME FILLED WITH SEDIMENT.

4 C6 SILT SOCK EROSION CONTROL DETAIL (AS AN APPROVED EQUAL)

SCALE: NONE



L = THE DISTANCE SUCH THAT THE ELEV. A = ELEV. B.

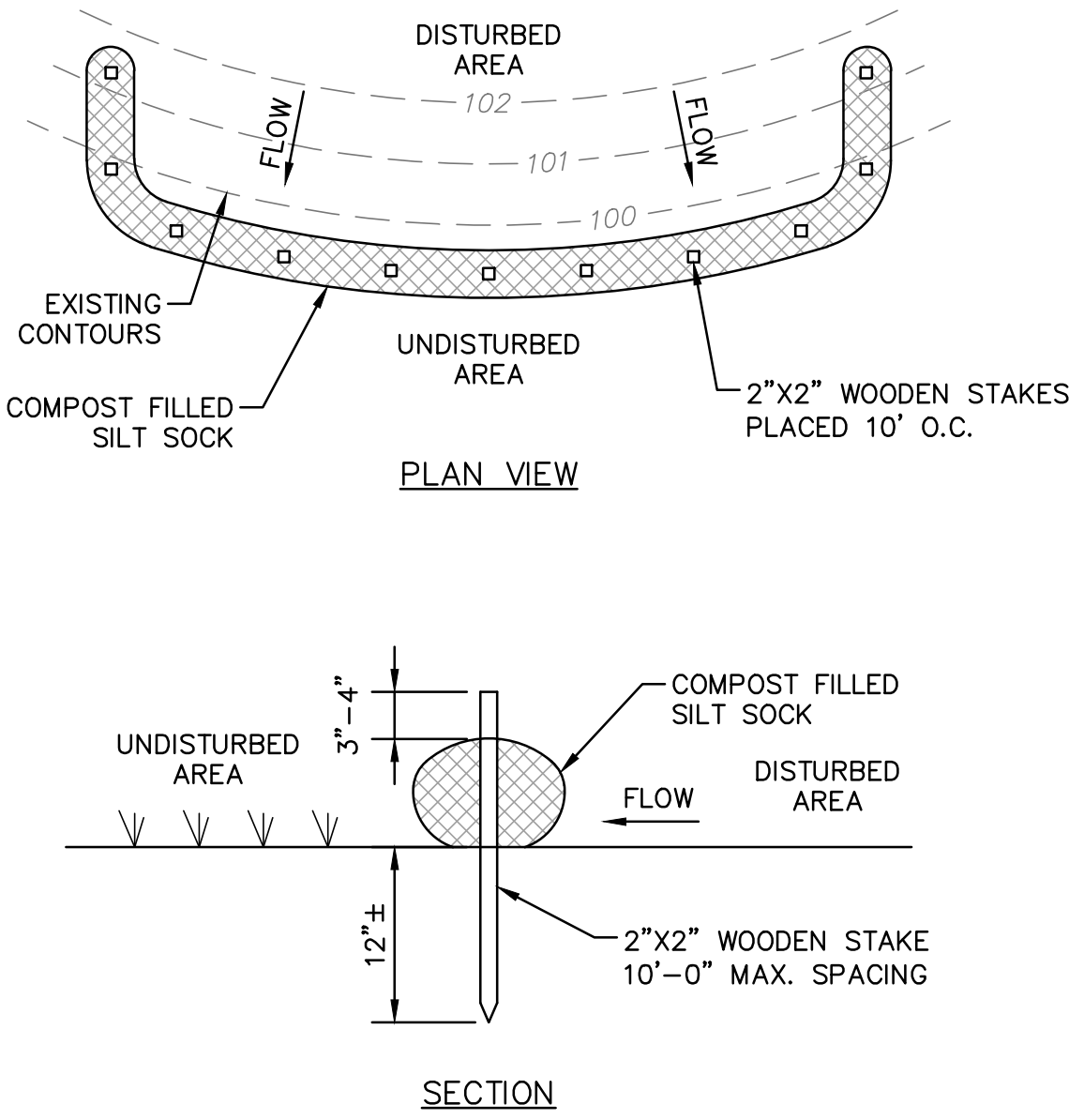
CHECK DAM SPACING

CHECK DAM NOTES:

- TEMPORARY CHECK DAMS ARE INTENDED TO BE INSTALLED AS NEEDED AS PART OF THE CONTRACTOR'S OVERALL EROSION CONTROL MEASURES.
- CHECK DAMS SHALL BE INSTALLED PRIOR TO DIRECTING RUNOFF TO THE SWALE.
- THE MAXIMUM HEIGHT OF A CHECK DAM SHALL BE 2 FEET WITH A 6 INCH DEPRESSION AT ITS CENTER FOR OVERFLOW.
- THE CHECK DAMS SHALL BE REMOVED WHEN THE SWALE IS STABILIZED WITH VEGETATION (90% COVERAGE).

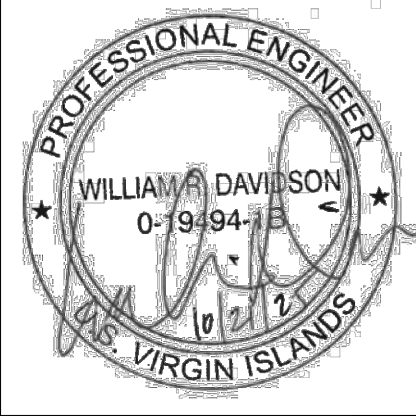
5 C6 STONE CHECK DAM DETAIL (AS NEEDED)

SCALE: NONE



SILT SOCK NOTES:

- SILT SOCK MAY BE USED BY THE CONTRACTOR AS AN APPROVED EQUAL TO THE PROPOSED SILT FENCE FOR PERIMETER EROSION CONTROL.
- SILT SOCK SHALL BE INSTALLED ON THE DOWNSTEAM EDGE OF ANY EARTH REMOVAL OR EXCAVATION AND REMOVED WHEN THE AREA IS STABILIZED.
- INSTALL SILT SOCK AROUND ALL MATERIAL STOCKPILES.
- MAINTENANCE SHALL BE PERFORMED AS NEEDED, AND THE MATERIAL REMOVED WHEN "BULGES" DEVELOP. DO NOT DEPOSIT THE MATERIAL NEAR WETLANDS OR WATERCOURSES.



| REVISION DESCRIPTION                                    | DATE     |
|---------------------------------------------------------|----------|
| ISSUED FOR DPNR STT C2M COMMITTEE REVIEW AND APPROVAL   | 10/30/25 |
| ISSUED FOR DPNR & DPW PERMITTING - NOT FOR CONSTRUCTION | 10/15/25 |

|            |     |      |
|------------|-----|------|
| 2          | 1   | REV. |
| CHECKED BY | WRD |      |
| DRAWN BY   | SES |      |

|             |                   |  |
|-------------|-------------------|--|
| DESIGNED BY | SES               |  |
| DATE:       | SEPTEMBER 5, 2024 |  |
| SCALE:      | AS SHOWN          |  |

|           |                                                                                                                     |
|-----------|---------------------------------------------------------------------------------------------------------------------|
| APPLICANT | STF SOLAR, LLC<br>A VIELLECTRON, LLC COMPANY<br>5000 EST ENIGHER STA 4A, PMB 146<br>SAINT JOHN, VI 00830            |
| PROJECT   | PROPOSED SOLAR ENERGY FACILITY (PHASE 1)<br>FORTUNA 9B & 2 WEST END QTR<br>ESTATE FORTUNA<br>SAINT THOMAS, VI 00802 |

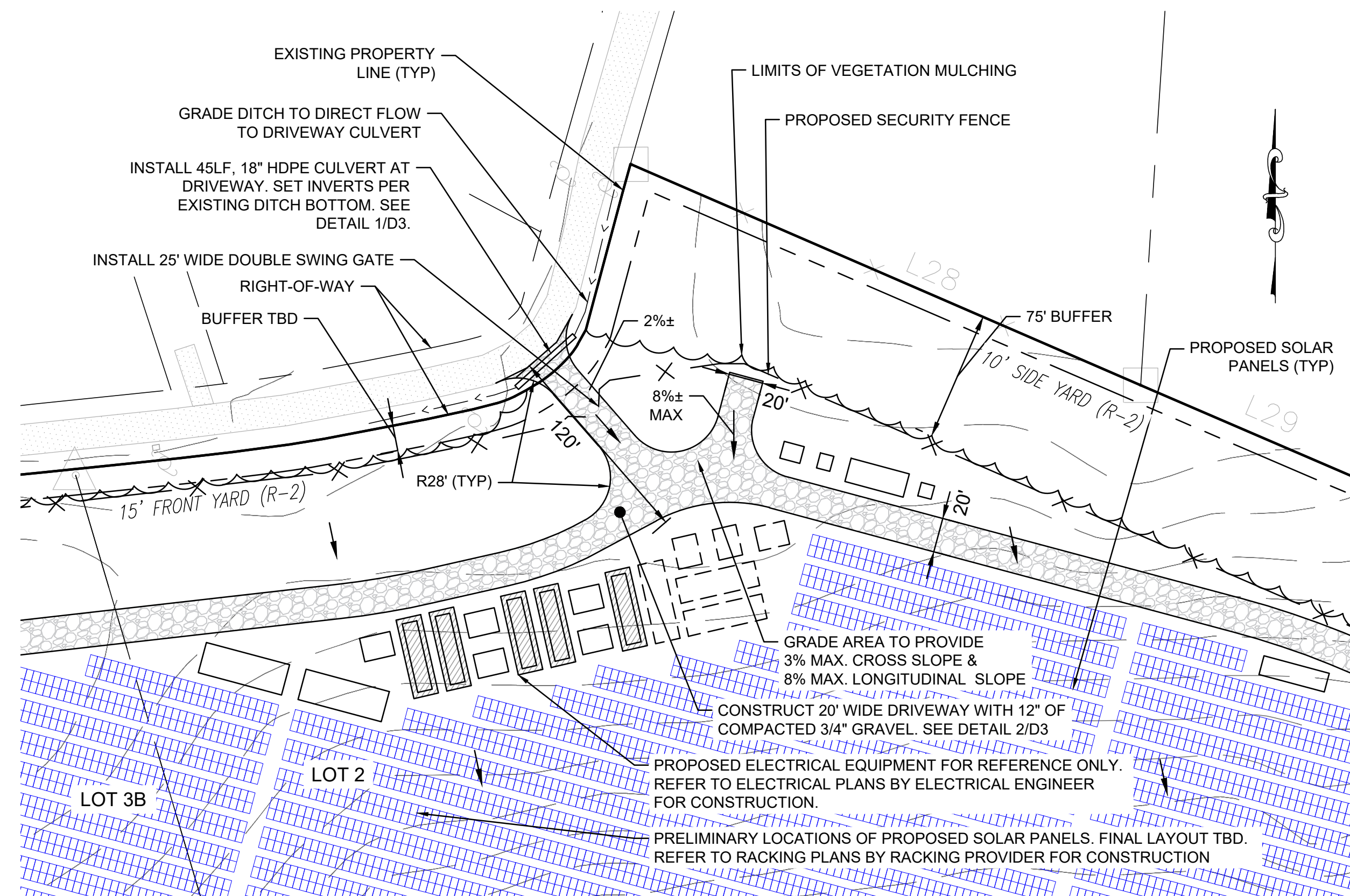
|                                 |
|---------------------------------|
| EROSION CONTROL NOTES & DETAILS |
| C6                              |
| PROJECT NO. 23.141001.00        |
| SHEET 6 OF 8                    |

CONSTRUCTION  
DETAILS 1

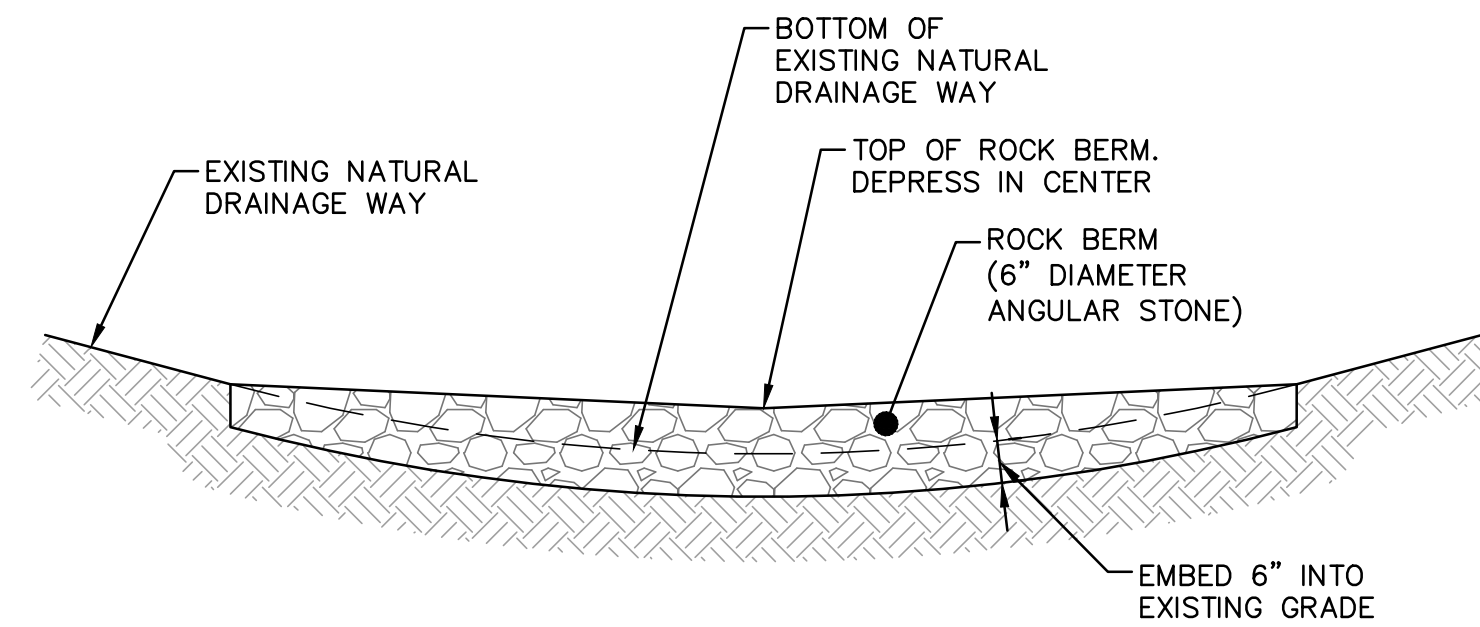
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PROJECT NO. 23.141001.00

SHEET 7 OF 8



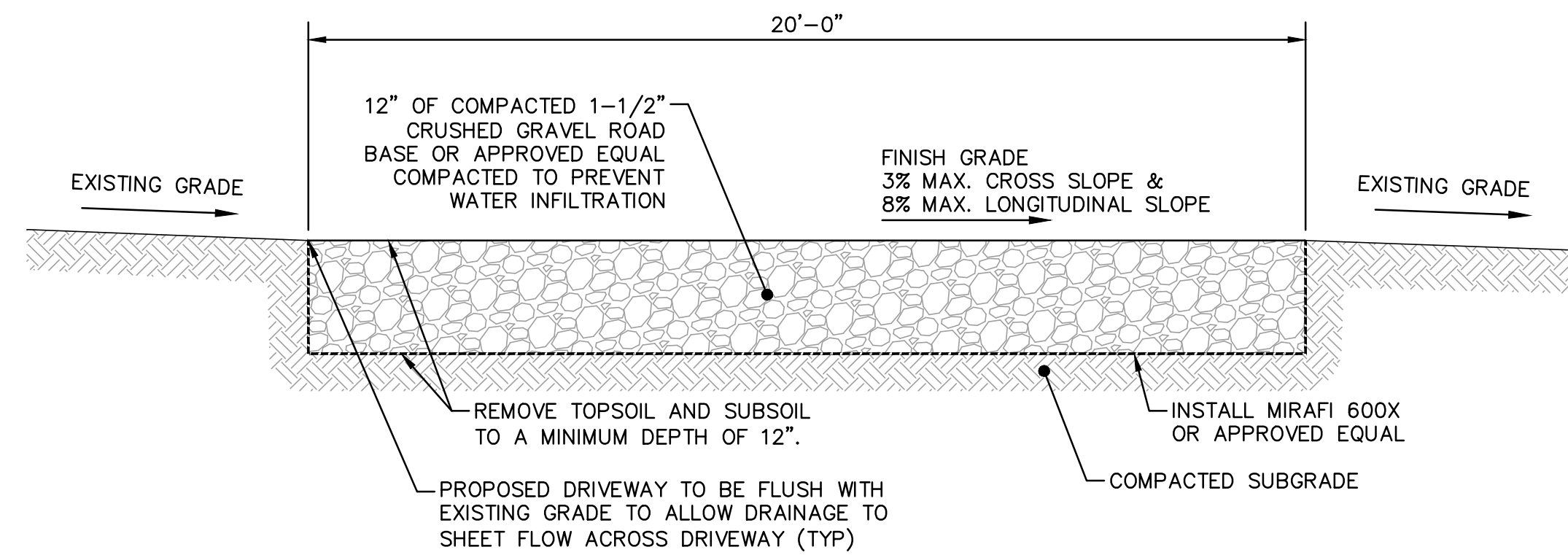
**DRIVEWAY DETAIL PLAN**  
SCALE: 1" = 60'



ROCK BERM NOTES:

1. REFER TO PLANS FOR APPROXIMATE LOCATION OF ROCK BERMS.
2. THE CONTRACTOR SHALL COORDINATE WITH THE DESIGN ENGINEER IN THE FIELD ON THE FINAL LOCATION AND WIDTH OF THE PROPOSED ROCK BERMS. THE DESIGN INTENTION IS TO INSTALL THE BERMS IN THE CENTER OF THE NATURAL DRAINAGE FLOW PATHS WITHIN THE SOLAR FIELD TO SLOW AND DISSIPATE STORMWATER RUNOFF.

**3 PERMANENT ROCK BERM SERIES**  
C8 SCALE: NONE

DRIVEWAY NOTES:

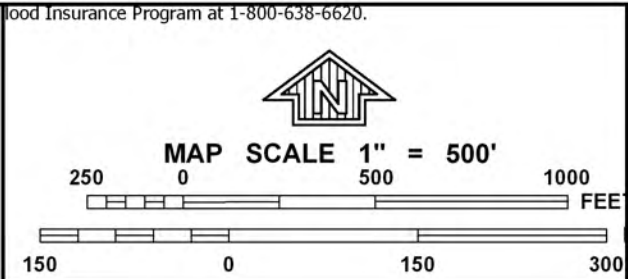
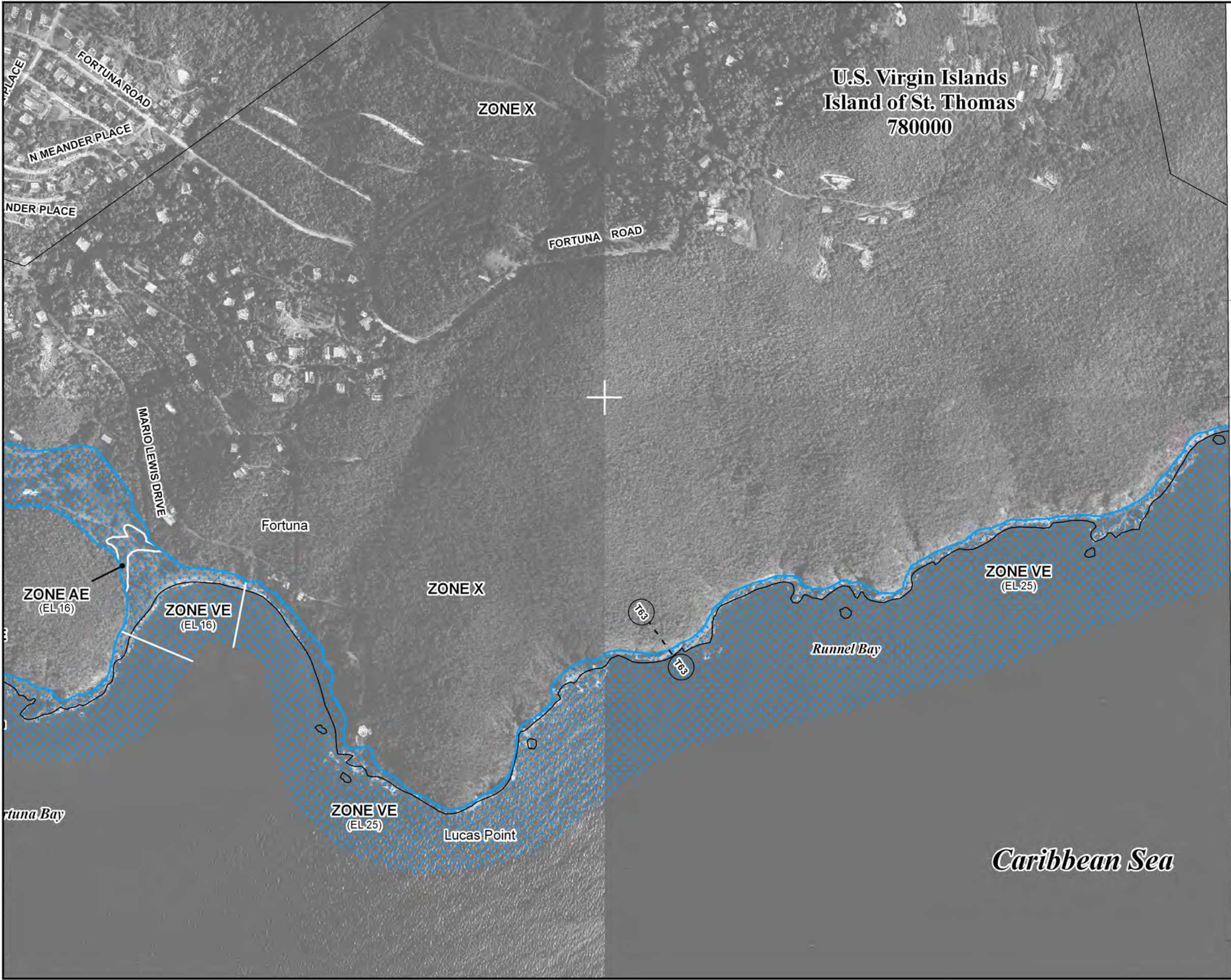
1. THE CONTRACTOR SHALL SUBMIT A SAMPLE OF THE PROPOSED CRUSHED GRAVEL FOR REVIEW AND APPROVAL BY THE DESIGN ENGINEER PRIOR TO THE START OF ROADWAY CONSTRUCTION.
2. THE PROFILE OF THE ROAD SHALL FOLLOW THE EXISTING TERRAIN TO THE GREATEST EXTENT POSSIBLE. THE CONTRACTOR SHALL CUT OR FILL AREAS AS NEEDED TO CREATE A SMOOTH CONTINUOUS ACCESS DRIVE WITH A MAX GRADE OF 15%.
3. THE CONTRACTOR SHALL GRADE EACH SIDE OF THE ROAD AS NEEDED TO MAINTAIN A 4% MAX CROSS SLOPE.
4. THE DRY DENSITY AFTER COMPACTION SHALL NOT BE LESS THAN 95% OF THE STANDARD PROCTOR TEST AND DONE IN ACCORDANCE WITH THE REQUIREMENTS OF ASTM D698.

**2 TYPICAL ACCESS DRIVEWAY SECTION**  
C8 SCALE: NONE

[illegible]

## Attachment I – Required Maps and Plans





NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0023G

**FIRM**

FLOOD INSURANCE RATE MAP

U.S. VIRGIN ISLANDS

PANEL 23 OF 94

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

| COMMUNITY           | NUMBER | PANEL | SUFFIX |
|---------------------|--------|-------|--------|
| U.S. VIRGIN ISLANDS | 780000 | 0023  | G      |

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.

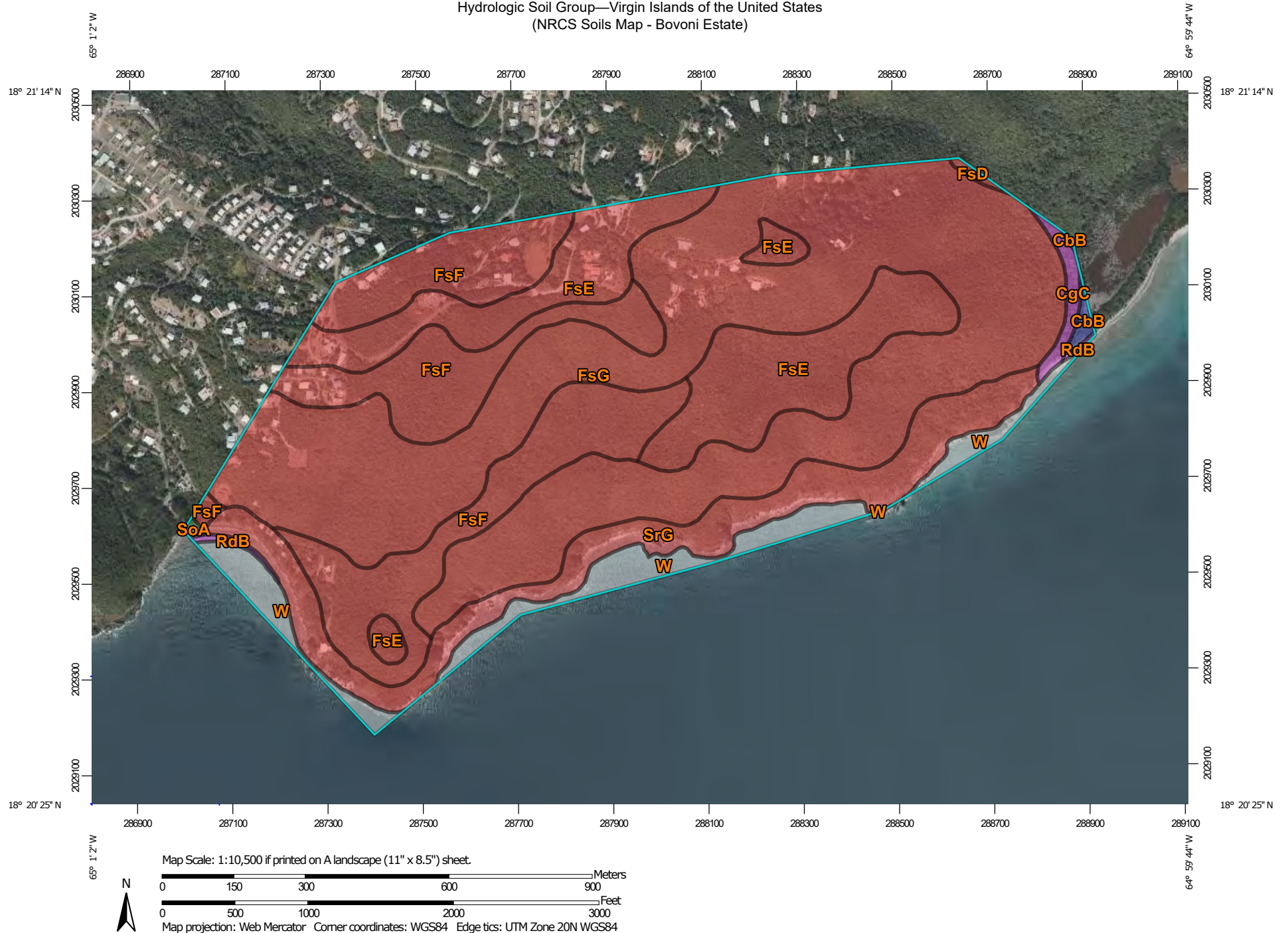
MAP NUMBER  
7800000023G

MAP REVISED  
APRIL 16, 2007

Federal Emergency Management Agency

This is an official FIRMette showing a portion of the above-referenced flood map created from the MSC FIRMette Web tool. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For additional information about how to make sure the map is current, please see the Flood Hazard Mapping Updates Overview Fact Sheet available on the FEMA Flood Map Service Center home page at <https://msc.fema.gov>.

# Hydrologic Soil Group—Virgin Islands of the United States (NRCS Soils Map - Bovoni Estate)



Hydrologic Soil Group—Virgin Islands of the United States  
(NRCS Soils Map - Bovoni Estate)

## MAP LEGEND

### Area of Interest (AOI)

 Area of Interest (AOI)

### Soils

#### Soil Rating Polygons

 A  
 A/D  
 B  
 B/D  
 C  
 C/D  
 D  
 Not rated or not available

#### Soil Rating Lines

 A  
 A/D  
 B  
 B/D  
 C  
 C/D  
 D  
 Not rated or not available

#### Soil Rating Points

 A  
 A/D  
 B  
 B/D

 C  
 C/D  
 D  
 Not rated or not available

### Water Features

 Streams and Canals

### Transportation

 Rails  
 Interstate Highways  
 US Routes  
 Major Roads  
 Local Roads

### Background

 Aerial Photography

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Virgin Islands of the United States

Survey Area Data: Version 7, Sep 11, 2025

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Data not available.

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

## Hydrologic Soil Group

| Map unit symbol                    | Map unit name                                                                | Rating | Acres in AOI | Percent of AOI |
|------------------------------------|------------------------------------------------------------------------------|--------|--------------|----------------|
| CbB                                | Cinnamon Bay loam, 0 to 5 percent slopes, occasionally flooded               | B      | 0.9          | 0.3%           |
| CgC                                | Cinnamon Bay gravelly loam, 5 to 12 percent slopes, occasionally flooded     | A      | 2.5          | 0.8%           |
| FsD                                | Fredriksdal-Susannaberg complex, 12 to 20 percent slopes, extremely stony    | D      | 0.5          | 0.2%           |
| FsE                                | Fredriksdal-Susannaberg complex, 20 to 40 percent slopes, extremely stony    | D      | 50.7         | 15.6%          |
| FsF                                | Fredriksdal-Susannaberg complex, 40 to 60 percent slopes, extremely stony    | D      | 65.2         | 20.0%          |
| FsG                                | Fredriksdal-Susannaberg complex, 60 to 90 percent slopes, extremely stony    | D      | 152.6        | 46.9%          |
| RdB                                | Redhook extremely stony sand, 0 to 5 percent slopes, rubbly                  | A      | 0.7          | 0.2%           |
| SoA                                | Solitude gravelly fine sandy loam, 0 to 2 percent slopes, frequently flooded | A/D    | 0.3          | 0.1%           |
| SrG                                | Southgate-Rock outcrop complex, 60 to 90 percent slopes                      | D      | 34.6         | 10.6%          |
| W                                  | Water                                                                        |        | 17.5         | 5.4%           |
| <b>Totals for Area of Interest</b> |                                                                              |        | <b>325.5</b> | <b>100.0%</b>  |

## Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

## Rating Options

*Aggregation Method:* Dominant Condition

*Component Percent Cutoff:* None Specified

*Tie-break Rule:* Higher

## Attachment J – Hydrology Report





# Hydrology Report

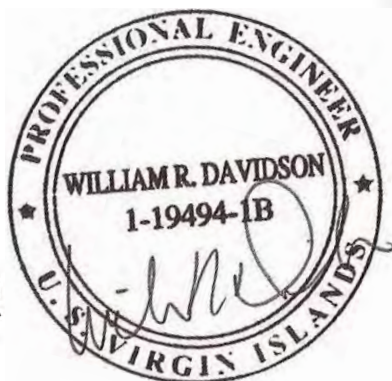
For a Proposed Solar Energy Facility  
with Battery Storage

Parcel No. 3B & 2 Fortuna  
Estate Fortuna  
St. Thomas, U.S. Virgin Islands

HTA Project No. 23.141001.00

October 2025

Applicant:  
STF Solar, LLC  
*A Vielectron LLC Company*



Trusted Experts | Innovative Results

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# Introduction

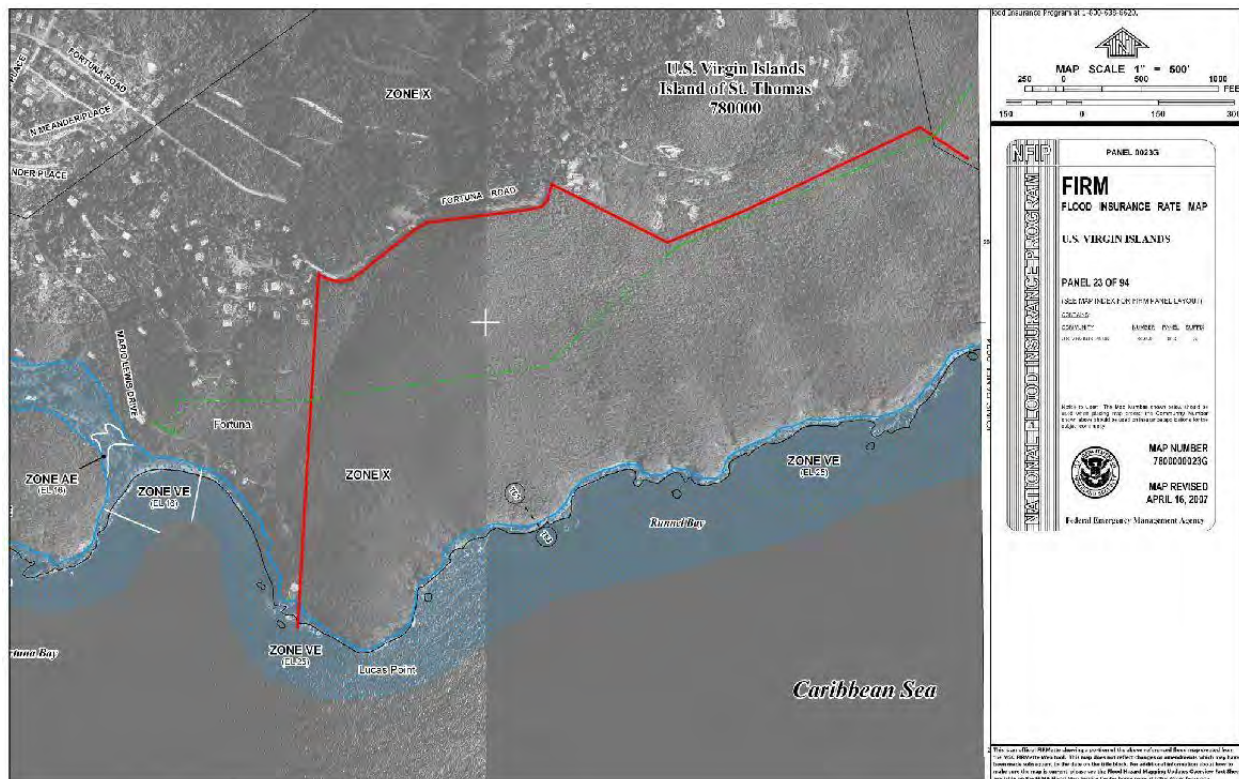
## Project Location

The proposed solar energy facility is located in Tier II (inland) with portions of the site located in Tier I (coastal zone) at 3B and 2 Fortuna, Estate Fortuna near the western section of the United States Virgin Island Saint Thomas, south of Fortuna Road (see below image). The total site (including lot 3B and 2 identified as Parcel No. 104901013400 and 104404046300, respectively) area is 210.6 +/- acres, where 44.5 +/- acres are anticipated to be disturbed in phase 1 and an additional 50.85 +/- for phase 2. Phase 1 of the project is located entirely in Tier II, where phase 2 of the project is anticipated to be constructed within Tier I of the Coastal Zone Management (CZM) line and concurrently with phase 1.



## FEMA Flood Hazard

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) Number FM7800000023G, effective date April 16, 2007, covers the project site. The site is predominately located within flood zone "X", with the 100-year flood zone "VE" present in the southern part of the site near the coastline (see below image). No wetlands are present on-site.



Topographic information used for the development of hydrologic and hydraulic models at the project site and contiguous areas was obtained from American Land Title Association (ALTA) and topographic survey (survey) prepared by Marvin Berning & Associates professional land surveyors in March 2024. The survey provided 10-foot internal contours of the project area, the shoreline, cliff line, limits of the flood zone, and delineation of the CZM Tier I line.

## Project Description

The project consists of the construction of a ground mounted racking solar field system with a total 44+/- MWdc (18 MWac) capacity including on-site battery energy storage system (BESS), equipment pads and access driveways; phase 1 anticipates constructing 20.16+/- MWdc (18 MWac) within Tier II and the remaining 23.84 +/- MWdc in phase 2 within Tier I. The racking system will be supported on 2.375-inch diameter ground screws installed into the ground in rows running at a 195-degree rotation from the east-west axis with each row separated by a typical 5-foot aisle. The solar panels are set at a 10-degree fixed tilt that will rest a minimum 24-inches above ground allowing grass and other various open space vegetation to grow underneath.

The site is currently being partially cleared in accordance to an approved Permit Letter Request with a low ground pressure skid steer or track excavator with a mulching attachment to remove and grind the existing trees and vegetation within 2-inches of the existing ground surface to preserve all topsoil and allow existing roots to remain, where the majority of the mulch is left in place while any excess mulch is placed in a perimeter berm along the downhill slopes toward the coast (see below image). Prior to construction of the solar racking system, the remaining project area will be cleared using the current clearing methods and the security fence will be installed.



| STORM EVENT    | 24-HOUR<br>RAINFALL (Inches) |
|----------------|------------------------------|
| 2-Year Storm   | 3.82                         |
| 10-Year Storm  | 7.31                         |
| 25-Year Storm  | 9.63                         |
| 100-Year Storm | 13.70                        |

## Soils

Existing site soil information was taken from the Natural Resources Conservation Service's (NRCS). The NRCS Web Soil Survey (**Appendix B**) classifies the types of soils found within the watershed according to hydrologic soils group (HSG): A, B, C or D. The site consists entirely of HSG D soils, as the United States Virgin Island of Saint Thomas is known for having volcanic, rocky, soils.

## Hydrographs

The overall pre-development and post-development site hydrographs were calculated utilizing the method detailed in Technical Release 55 (TR-55) "*Urban Hydrology for Small Watersheds*" as published by the United States Department of Agriculture Soil Conservation Service, "SCS", and revised in June of 1986.

The site drains entirely in the southern direction towards the coast and discharges into the Caribbean Sea; therefore, the analysis of the on-site hydrologic and hydraulic conditions of the project are within one (1) watershed with a designated design point (assumed critical stormwater discharge point).

## Modeling

The hydrologic analysis was performed using the HydroCAD computer program which is based on the NRCS Technical Release 20 (TR-20) Model for Project Formulation Hydrology. Due to the existing grounds and topography, combination of segments of sheet flow and shallow concentrated flow methods were used to determine the time of concentration for the watershed.

For this analysis, rainfall depth was uniformly imposed on the pre- and post-development watershed over a 24-hour period and then converted to a peak runoff volume using a Runoff Curve Number (CN), which is determined based on the soil types and HSG classified by the NRCS Web Soil Survey. The lower or higher the CN the more permeable or impervious the ground conditions are, respectively. Said volume is transformed into a hydrograph utilizing the Unit Hydrograph Theory and routing procedures, which are dependent on the travel time through the watershed.

## Pre-Development Conditions

The existing site, previously used for agricultural purposes, is currently vacant and has been partially cleared and mulched in accordance with an approved Permit Letter Request, but was previously undeveloped and overgrown with woods, grass and mixed vegetation, which has been used as the pre-development conditions for the purpose of this analysis with a land cover of “Woods/grass comb., Good” for the HSG D soils identified on-site. Please see Pre-Development Drainage Map (**Appendix C**).

The analysis criteria used for the SCS TR-20 hydraulic analysis of the pre-development conditions are as follows:

- Storm Event Frequency: 2, 10, 25 and 100-year, 24-Hour Storms
- Runoff Coefficients (CN)  
Woods/grass combo., Good, HSG D = 79

The table below provides a summary of the peak runoff rates in the pre-development conditions.

| PRE-DEVELOPMENT CONDITIONS |                |
|----------------------------|----------------|
|                            | Design Point 1 |
| Inflow Area                | 211.50 Acres   |
| 2-Year Peak Flow           | 415.07 cfs     |
| 10-Year Peak Flow          | 1,108.78 cfs   |
| 25-Year Peak Flow          | 1,583.99 cfs   |
| 100-Year Peak Flow         | 2,415.78 cfs   |

## Post-Development Conditions

The proposed site is designed to utilize the existing topography and minimize the effects on the natural hydrologic and hydraulic patterns of the existing site. The proposed project will maintain the soil type, watershed, and design point consistent with the pre-development conditions. Please see Post-Development Drainage Map (**Appendix D**).

The site contains steep slopes that may require steps and/or cut ins to install the proposed solar system that will only be constructed on an as needed basis to reduce the overall ground disturbance of the site. Additional silt fencing may be required to control erosion during construction, and stabilization will be established before the completion of construction. Natural spray tack adhesives will be used for permanent measures to stabilize the site for any necessary stepping access paths or cut ins. Permanent rock berm series will also be installed as needed within naturally occurring drainage flow paths,

excluding anything within the gully buffers, as an erosion control measure and help reduce the overall peak runoff rates for various storm events.

At the end of each row, all power lines used to operate the solar panels will be distributed above ground to connect the equipment pads where the low-voltage wires will run through a Class 2 Circuit (CAV) system and the high-voltage wires will run through conduits on concrete pads. No trenching or excavating is anticipated for this project further minimizing any ground disturbance to the site.

The entire site drains into the Caribbean Sea and concerns of adverse flooding are not anticipated therefore the 2022 U.S. Virgin Islands Environmental Protection Handbook (USVI EP Handbook) requirements to reduce the runoff volume for the 1-year design storm is not applicable for this project.

The proposed development will utilize dense Guinea Grass (*Megathyrsus maximus*), maintained at a 6"-12" height, to surround the proposed racking system (both within the aisles and underneath the panels) to create a stable ground condition similar to the existing conditions. For this hydrological analysis, a land cover of ">75% Grass Cover, Good" has been used for the developed portions of the site, while the undeveloped portions will maintain the existing land covers of "Woods/grass comb., Good". The panels themselves, with a 20-degrees fixed tilt and raised 24" from the ground, are modelled as pervious since all groundcover below them will be stabilized grass to absorb runoff and gaps between adjacent panels will allow water to drain freely. Below is a photo of a constructed solar site by VIElectron showing the dense stabilized Guinea grass in and around the solar modules.



For the purposes of this analysis, the anticipated additional impervious area for both phase 1 and 2 were included (approximately 35,460 +/- SF) and is from the equipment pads, above ground conduit runs, battery storage, and ground screws were accounted for and were considered paved areas for the purposes of this analysis. Additional ground cover includes the proposed access drive, which was considered gravel road.

The analysis criteria used for the SCS TR-20 hydraulic analysis of the post-development conditions are as follows:

- Storm Event Frequency: 2, 10, 25 and 100-year, 24-Hour Storms
- Runoff Coefficients (CN)
  - Impervious, HSG D = 98
  - Gravel roads, HSG D = 96
  - >75% Grass Cover, Good, HSG D = 80
  - Woods/grass combo., Good, HSG D = 79

The table below provides a summary of the peak runoff rates in the post-development conditions.

| POST-DEVELOPMENT CONDITIONS |                |
|-----------------------------|----------------|
|                             | Design Point 1 |
| Inflow Area                 | 211.50 Acres   |
| 2-Year Peak Flow            | 398.38 cfs     |
| 10-Year Peak Flow           | 1,045.05 cfs   |
| 25-Year Peak Flow           | 1,484.00 cfs   |
| 100-Year Peak Flow          | 2,250.90 cfs   |

## Peak Runoff Analysis

Peak runoff was compared between the pre- and post-development conditions for the design point. As shown in the table below and HydroCAD analysis (**Appendix E**), the small increase in impervious cover is mostly absorbed by the overall dense Guinea grass areas in and around the panels, creating a similar ground cover to the existing conditions helping to stabilize the ground and mitigate runoff. The development will generally maintain the existing grades and drainage flow patterns with minimal changes to the current topography. To further reduce the peak rate of runoff and preserve the integrity of the site from future storm event erosion, several series of permanent rock berms will be constructed where naturally occurring drainage flow paths exist on-site, excluding the two (2) ghuts and their associated buffers.

The watersheds were designed to provide peak runoff rate reductions between the pre- and post-development conditions up to the 100-year design storm for flow rate to comply with the 2022 U.S. Virgin Islands Environmental Protection Handbook (USVI EP Handbook).

The site is volcanic HSG D soils, which provide little in the way of stormwater infiltration. Understanding the limited infiltration, the proposed rock berm series uses loose compacted crushed stone to help as a dispersion device while the rest of the disturbed areas of the watershed will feature dense Guinea grass which is intended to capture slow stormwater runoff and prevent erosion.

The tables below provide a summary of the control of the peak rate of runoff between the pre- and post-development conditions.

| PEAK RUNOFF DESIGN POINT 1 |              |              |                  |
|----------------------------|--------------|--------------|------------------|
| Design Storm               | Pre-Dev      | Post-Dev     | Difference (cfs) |
| 2-Year Peak Flow           | 415.07 cfs   | 398.38 cfs   | -16.69 cfs       |
| 10-Year Peak Flow          | 1,108.78 cfs | 1,045.05 cfs | -63.73 cfs       |
| 25-Year Peak Flow          | 1,583.99 cfs | 1,484.00 cfs | -99.99 cfs       |
| 100-Year Peak Flow         | 2,415.78 cfs | 2,250.90 cfs | -164.88 cfs      |

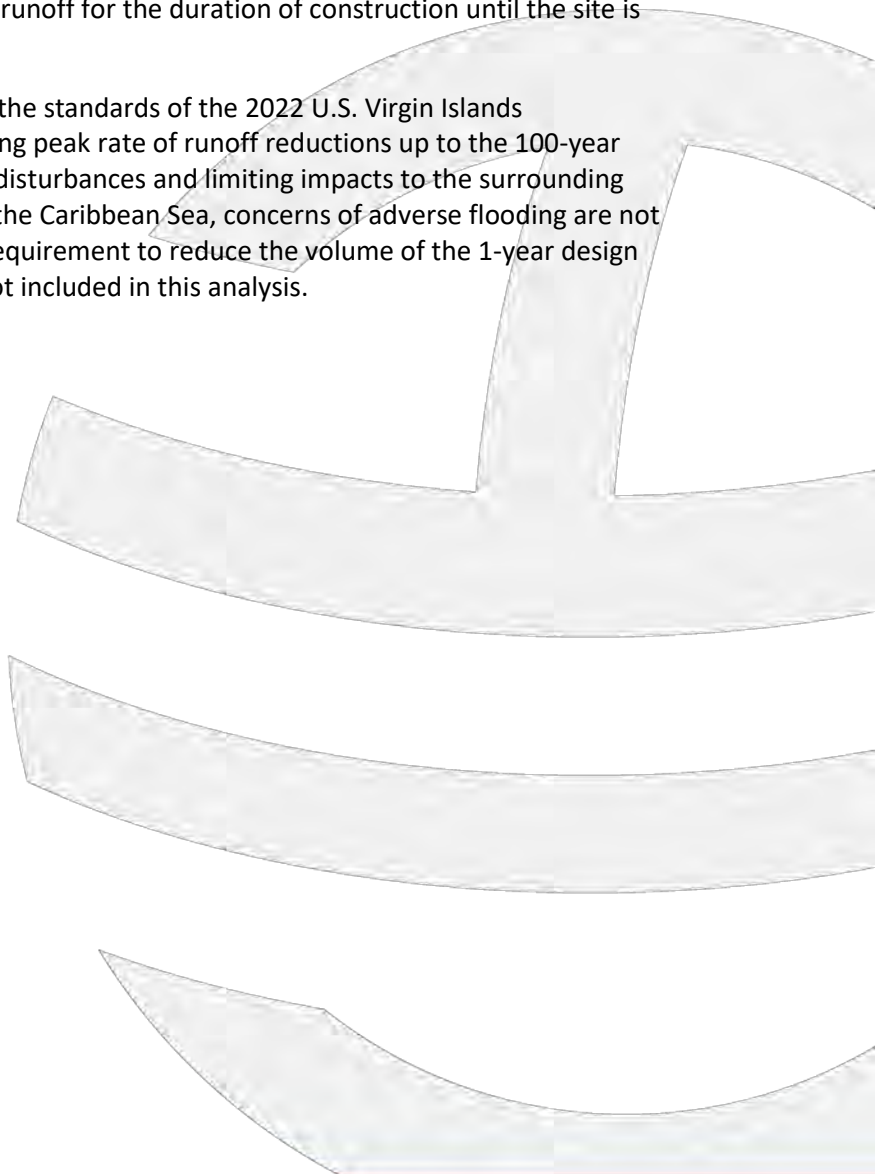
## Conclusion

The project was designed to maintain existing natural soils, topography, and flow patterns. All existing vegetation within the project area will be ground flush with the existing grade with minimal root removal therefore leaving most soils in place and undisturbed. Limited grading is proposed which will allow for natural drainage patterns to be maintained.

The proposed design has minimal impervious surfaces that are typically associated with stormwater runoff. To mitigate impacts from the development, a dense Guinea grass maintained between 6-12-inches in and around the solar field will provide permanent stabilization and slow stormwater runoff. The site will also feature several permanent rock berm series to be installed in the stormwater flow paths, excluding the existing two (2) ghuts and associated buffers, to slow runoff and promote infiltration with the Guinea grasses.

The nature of this development does not generate stormwater pollutants typically associated with larger developments. Once constructed, the site will essentially be self-operational with limited vehicle traffic and will not use herbicides, pesticides or cleaning chemicals. Extensive perimeter erosion control measures are proposed and a detailed Stormwater Prevention Pollution Plan (SWPPP) will be implemented to prevent erosion and sediment runoff for the duration of construction until the site is permanently stabilized.

In summary, the project was designed to meet the standards of the 2022 U.S. Virgin Islands Environmental Protection Handbook by providing peak rate of runoff reductions up to the 100-year design storm, while minimizing on-site ground disturbances and limiting impacts to the surrounding properties. Due to the entire site draining into the Caribbean Sea, concerns of adverse flooding are not anticipated, therefore the USVI EP Handbook requirement to reduce the volume of the 1-year design storm is not applicable for this project and is not included in this analysis.



## Appendix A - Rainfall Data





## POINT PRECIPITATION FREQUENCY ESTIMATES

G.M. Bonnin, D. Martin, B. Lin, T. Parzybok, M. Yekta, and D. Riley

NOAA, National Weather Service, Silver Spring, Maryland

[PF\\_tabular](#) | [PF\\_graphical](#) | [Maps & aerals](#)

### PF tabular

| PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches) <sup>1</sup> |                                     |                        |                        |                        |                        |                        |                        |                        |                       |                       |
|----------------------------------------------------------------------------------------------------------|-------------------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|-----------------------|-----------------------|
| Duration                                                                                                 | Average recurrence interval (years) |                        |                        |                        |                        |                        |                        |                        |                       |                       |
|                                                                                                          | 1                                   | 2                      | 5                      | 10                     | 25                     | 50                     | 100                    | 200                    | 500                   | 1000                  |
| 5-min                                                                                                    | 0.264<br>(0.251-0.334)              | 0.374<br>(0.327-0.429) | 0.475<br>(0.417-0.535) | 0.546<br>(0.475-0.617) | 0.635<br>(0.545-0.725) | 0.702<br>(0.594-0.810) | 0.767<br>(0.642-0.899) | 0.833<br>(0.687-0.987) | 0.921<br>(0.742-1.11) | 0.990<br>(0.781-1.21) |
| 10-min                                                                                                   | 0.361<br>(0.342-0.456)              | 0.511<br>(0.446-0.586) | 0.649<br>(0.569-0.731) | 0.746<br>(0.650-0.843) | 0.867<br>(0.745-0.991) | 0.959<br>(0.812-1.11)  | 1.05<br>(0.877-1.23)   | 1.14<br>(0.938-1.35)   | 1.26<br>(1.01-1.51)   | 1.35<br>(1.07-1.65)   |
| 15-min                                                                                                   | 0.464<br>(0.440-0.585)              | 0.655<br>(0.573-0.753) | 0.834<br>(0.731-0.939) | 0.958<br>(0.834-1.08)  | 1.11<br>(0.957-1.27)   | 1.23<br>(1.04-1.42)    | 1.34<br>(1.13-1.58)    | 1.46<br>(1.20-1.73)    | 1.62<br>(1.30-1.94)   | 1.74<br>(1.37-2.12)   |
| 30-min                                                                                                   | 0.742<br>(0.704-0.937)              | 1.05<br>(0.917-1.20)   | 1.34<br>(1.17-1.50)    | 1.53<br>(1.34-1.73)    | 1.78<br>(1.53-2.04)    | 1.97<br>(1.67-2.28)    | 2.15<br>(1.80-2.52)    | 2.34<br>(1.93-2.77)    | 2.59<br>(2.08-3.11)   | 2.78<br>(2.19-3.39)   |
| 60-min                                                                                                   | 1.10<br>(1.04-1.39)                 | 1.56<br>(1.36-1.79)    | 1.98<br>(1.74-2.23)    | 2.28<br>(1.98-2.57)    | 2.64<br>(2.27-3.02)    | 2.92<br>(2.48-3.38)    | 3.20<br>(2.67-3.74)    | 3.47<br>(2.86-4.11)    | 3.84<br>(3.09-4.61)   | 4.12<br>(3.25-5.02)   |
| 2-hr                                                                                                     | 1.38<br>(1.34-1.81)                 | 2.02<br>(1.74-2.36)    | 2.67<br>(2.31-3.06)    | 3.14<br>(2.70-3.63)    | 3.76<br>(3.16-4.42)    | 4.25<br>(3.49-5.06)    | 4.73<br>(3.83-5.73)    | 5.23<br>(4.14-6.44)    | 5.92<br>(4.54-7.46)   | 6.44<br>(4.82-8.29)   |
| 3-hr                                                                                                     | 1.72<br>(1.47-2.02)                 | 2.26<br>(1.94-2.63)    | 3.00<br>(2.59-3.44)    | 3.54<br>(3.04-4.08)    | 4.25<br>(3.58-4.98)    | 4.81<br>(3.96-5.70)    | 5.37<br>(4.36-6.48)    | 5.96<br>(4.74-7.30)    | 6.76<br>(5.22-8.45)   | 7.39<br>(5.57-9.41)   |
| 6-hr                                                                                                     | 2.08<br>(1.74-2.50)                 | 2.77<br>(2.31-3.31)    | 3.87<br>(3.24-4.57)    | 4.73<br>(3.93-5.60)    | 5.90<br>(4.77-7.15)    | 6.85<br>(5.39-8.47)    | 7.84<br>(5.99-9.91)    | 8.88<br>(6.63-11.4)    | 10.4<br>(7.45-13.7)   | 11.5<br>(8.06-15.8)   |
| 12-hr                                                                                                    | 2.44<br>(2.00-2.99)                 | 3.30<br>(2.71-4.05)    | 4.82<br>(3.94-5.82)    | 6.02<br>(4.84-7.36)    | 7.74<br>(6.02-9.69)    | 9.15<br>(6.90-11.7)    | 10.6<br>(7.76-14.0)    | 12.2<br>(8.68-16.4)    | 14.5<br>(9.87-20.1)   | 16.4<br>(10.7-23.2)   |
| 24-hr                                                                                                    | 2.82<br>(2.39-3.36)                 | 3.82<br>(3.24-4.55)    | 5.72<br>(4.84-6.76)    | 7.31<br>(6.14-8.60)    | 9.63<br>(7.98-11.3)    | 11.6<br>(9.49-13.6)    | 13.7<br>(11.1-16.0)    | 16.0<br>(12.8-18.8)    | 19.3<br>(15.2-22.7)   | 22.0<br>(17.1-26.0)   |
| 2-day                                                                                                    | 3.65<br>(3.08-4.37)                 | 4.98<br>(4.19-5.95)    | 7.42<br>(6.23-8.81)    | 9.40<br>(7.84-11.1)    | 12.2<br>(10.1-14.4)    | 14.6<br>(11.8-17.2)    | 17.1<br>(13.7-20.1)    | 19.7<br>(15.7-23.3)    | 23.6<br>(18.4-28.0)   | 26.7<br>(20.6-31.7)   |
| 3-day                                                                                                    | 3.83<br>(3.20-4.61)                 | 5.23<br>(4.37-6.29)    | 7.78<br>(6.48-9.29)    | 9.84<br>(8.12-11.7)    | 12.8<br>(10.4-15.1)    | 15.2<br>(12.2-18.0)    | 17.7<br>(14.1-21.0)    | 20.5<br>(16.1-24.4)    | 24.4<br>(18.9-29.2)   | 27.6<br>(21.2-33.1)   |
| 4-day                                                                                                    | 4.01<br>(3.33-4.86)                 | 5.48<br>(4.55-6.62)    | 8.14<br>(6.74-9.77)    | 10.3<br>(8.41-12.3)    | 13.3<br>(10.7-15.9)    | 15.8<br>(12.6-18.9)    | 18.4<br>(14.6-22.0)    | 21.2<br>(16.6-25.5)    | 25.3<br>(19.5-30.4)   | 28.5<br>(21.7-34.4)   |
| 7-day                                                                                                    | 4.45<br>(3.67-5.46)                 | 6.08<br>(5.01-7.44)    | 9.10<br>(7.47-11.1)    | 11.6<br>(9.39-13.9)    | 15.1<br>(12.1-18.1)    | 18.0<br>(14.2-21.7)    | 21.1<br>(16.5-25.5)    | 24.5<br>(18.9-29.6)    | 29.3<br>(22.3-35.6)   | 33.2<br>(24.9-40.6)   |
| 10-day                                                                                                   | 4.91<br>(4.08-5.98)                 | 6.68<br>(5.54-8.12)    | 9.84<br>(8.11-11.8)    | 12.4<br>(10.1-14.8)    | 15.9<br>(12.8-19.0)    | 18.9<br>(15.1-22.6)    | 22.0<br>(17.4-26.3)    | 25.3<br>(19.8-30.4)    | 30.0<br>(23.1-36.2)   | 33.9<br>(25.7-41.0)   |
| 20-day                                                                                                   | 6.58<br>(5.59-7.76)                 | 8.78<br>(7.46-10.3)    | 12.2<br>(10.4-14.3)    | 14.9<br>(12.6-17.4)    | 18.6<br>(15.5-21.6)    | 21.5<br>(17.8-25.0)    | 24.5<br>(20.1-28.5)    | 27.6<br>(22.5-32.3)    | 32.0<br>(25.7-37.5)   | 35.4<br>(28.1-41.8)   |
| 30-day                                                                                                   | 8.10<br>(6.97-9.39)                 | 10.7<br>(9.19-12.3)    | 14.2<br>(12.2-16.4)    | 16.8<br>(14.4-19.3)    | 20.3<br>(17.2-23.3)    | 22.9<br>(19.4-26.4)    | 25.6<br>(21.5-29.5)    | 28.4<br>(23.7-32.8)    | 32.5<br>(26.8-37.7)   | 35.8<br>(29.3-42.2)   |
| 45-day                                                                                                   | 10.2<br>(8.93-11.6)                 | 13.2<br>(11.6-15.0)    | 17.0<br>(14.9-19.2)    | 19.7<br>(17.2-22.3)    | 23.3<br>(20.2-26.3)    | 26.0<br>(22.4-29.4)    | 28.7<br>(24.6-32.5)    | 31.4<br>(26.8-35.7)    | 35.0<br>(29.6-39.9)   | 37.8<br>(31.7-43.3)   |
| 60-day                                                                                                   | 12.0<br>(10.6-13.5)                 | 15.5<br>(13.7-17.4)    | 19.6<br>(17.3-21.9)    | 22.7<br>(20.0-25.3)    | 26.7<br>(23.4-29.8)    | 29.7<br>(25.9-33.2)    | 32.7<br>(28.4-36.7)    | 35.8<br>(30.9-40.3)    | 39.9<br>(34.1-45.2)   | 43.1<br>(36.5-48.9)   |

<sup>1</sup> Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

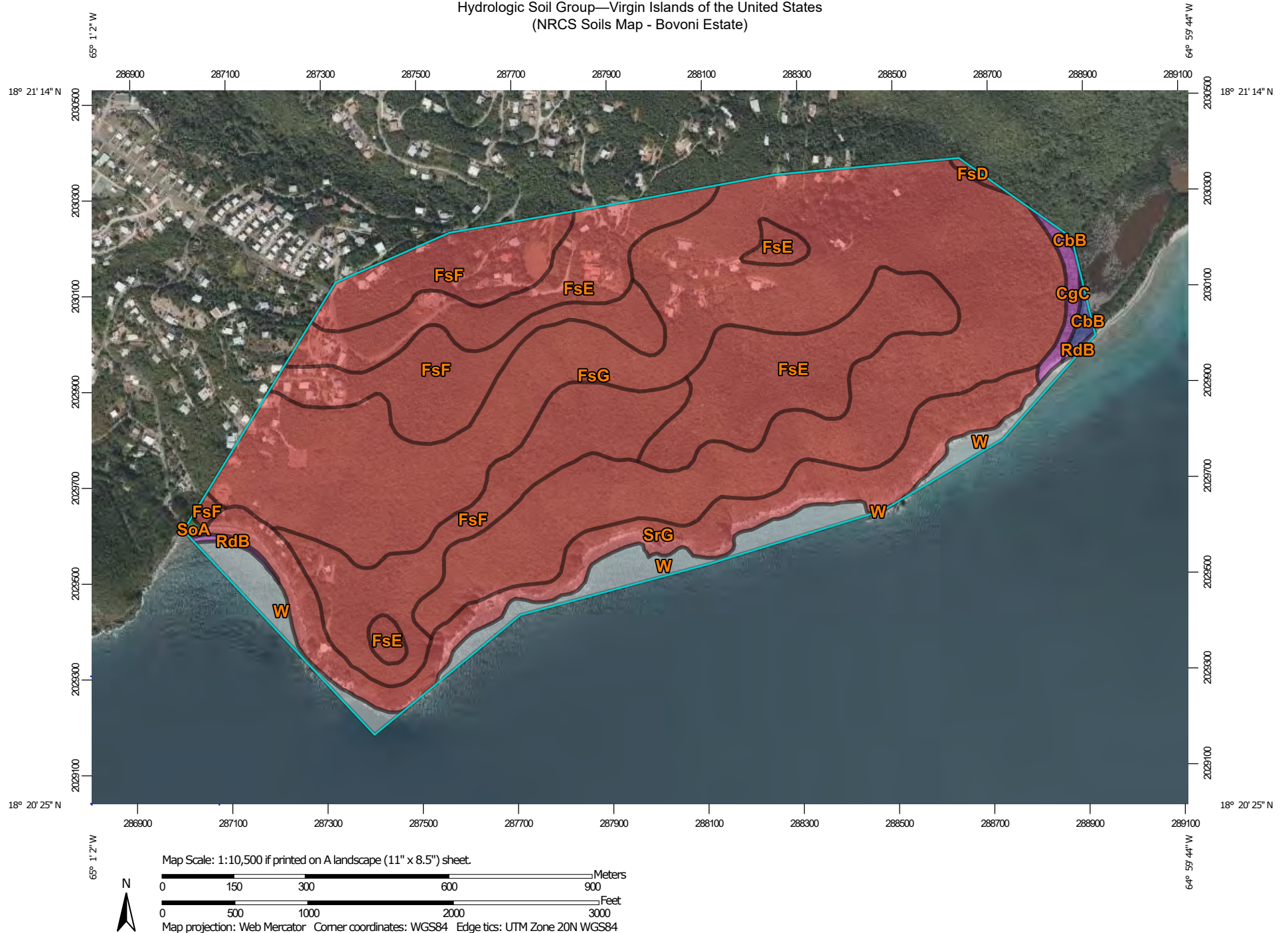
[Back to Top](#)

### PF graphical

## Appendix B – NRCS Web Soil Survey



# Hydrologic Soil Group—Virgin Islands of the United States (NRCS Soils Map - Bovoni Estate)



Hydrologic Soil Group—Virgin Islands of the United States  
(NRCS Soils Map - Bovoni Estate)

## MAP LEGEND

### Area of Interest (AOI)

 Area of Interest (AOI)

### Soils

#### Soil Rating Polygons

 A  
 A/D  
 B  
 B/D  
 C  
 C/D  
 D  
 Not rated or not available

#### Soil Rating Lines

 A  
 A/D  
 B  
 B/D  
 C  
 C/D  
 D  
 Not rated or not available

#### Soil Rating Points

 A  
 A/D  
 B  
 B/D

 C  
 C/D  
 D  
 Not rated or not available

### Water Features

 Streams and Canals

### Transportation

 Rails  
 Interstate Highways  
 US Routes  
 Major Roads  
 Local Roads

### Background

 Aerial Photography

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Virgin Islands of the United States

Survey Area Data: Version 7, Sep 11, 2025

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Data not available.

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

## Hydrologic Soil Group

| Map unit symbol                    | Map unit name                                                                | Rating | Acres in AOI | Percent of AOI |
|------------------------------------|------------------------------------------------------------------------------|--------|--------------|----------------|
| CbB                                | Cinnamon Bay loam, 0 to 5 percent slopes, occasionally flooded               | B      | 0.9          | 0.3%           |
| CgC                                | Cinnamon Bay gravelly loam, 5 to 12 percent slopes, occasionally flooded     | A      | 2.5          | 0.8%           |
| FsD                                | Fredriksdal-Susannaberg complex, 12 to 20 percent slopes, extremely stony    | D      | 0.5          | 0.2%           |
| FsE                                | Fredriksdal-Susannaberg complex, 20 to 40 percent slopes, extremely stony    | D      | 50.7         | 15.6%          |
| FsF                                | Fredriksdal-Susannaberg complex, 40 to 60 percent slopes, extremely stony    | D      | 65.2         | 20.0%          |
| FsG                                | Fredriksdal-Susannaberg complex, 60 to 90 percent slopes, extremely stony    | D      | 152.6        | 46.9%          |
| RdB                                | Redhook extremely stony sand, 0 to 5 percent slopes, rubbly                  | A      | 0.7          | 0.2%           |
| SoA                                | Solitude gravelly fine sandy loam, 0 to 2 percent slopes, frequently flooded | A/D    | 0.3          | 0.1%           |
| SrG                                | Southgate-Rock outcrop complex, 60 to 90 percent slopes                      | D      | 34.6         | 10.6%          |
| W                                  | Water                                                                        |        | 17.5         | 5.4%           |
| <b>Totals for Area of Interest</b> |                                                                              |        | <b>325.5</b> | <b>100.0%</b>  |

## Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

## Rating Options

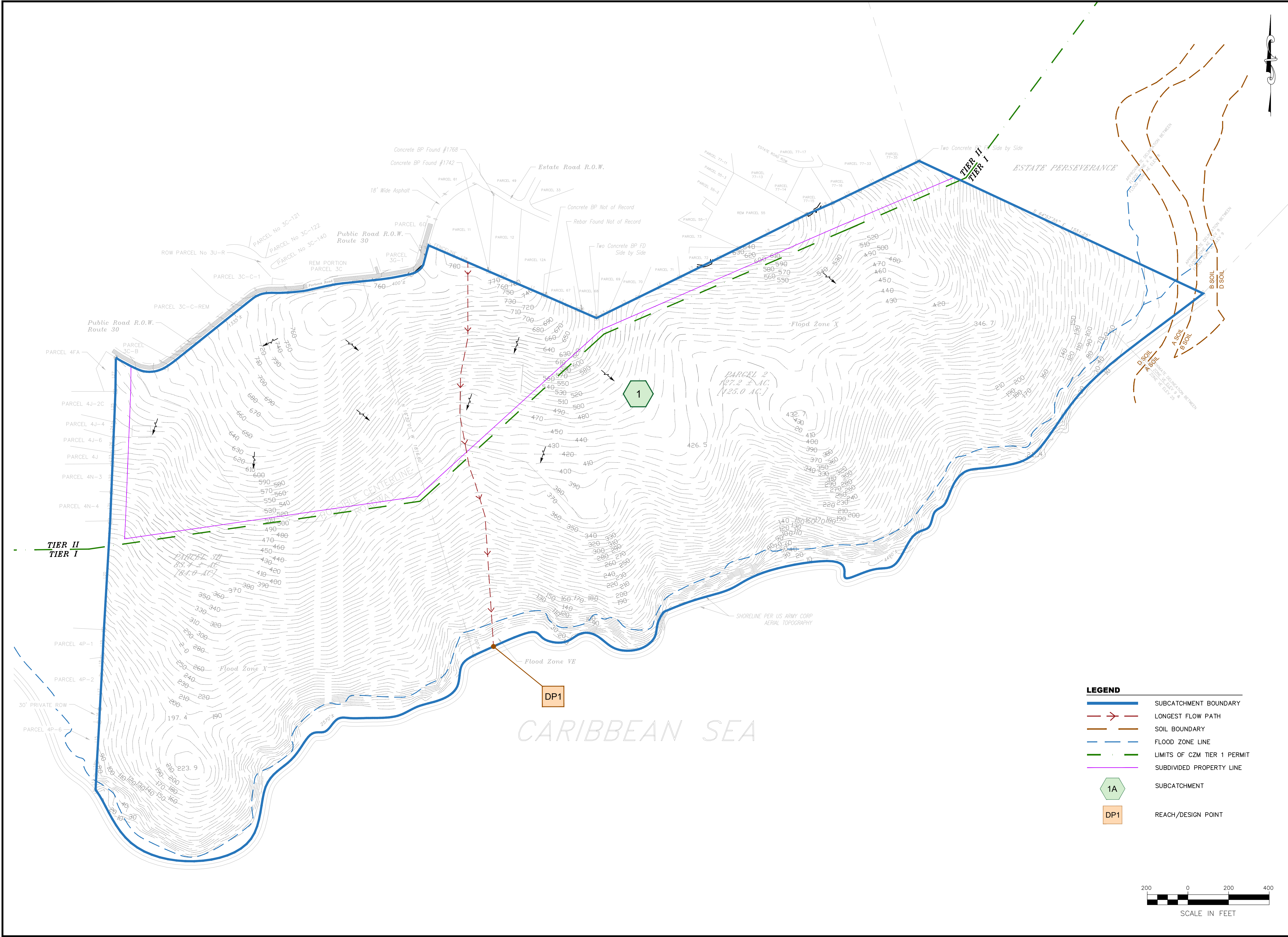
*Aggregation Method:* Dominant Condition

*Component Percent Cutoff:* None Specified

*Tie-break Rule:* Higher

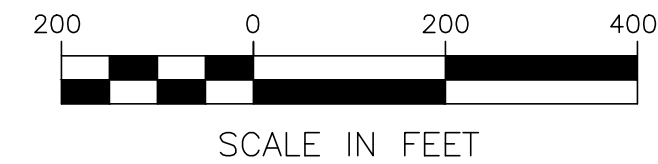
## Appendix C - Pre-Development Watershed Map





**LEGEND**

- SUBCATCHMENT BOUNDARY
- LONGEST FLOW PATH
- SOIL BOUNDARY
- FLOOD ZONE LINE
- LIMITS OF CZM TIER 1 PERMIT
- SUBDIVIDED PROPERTY LINE
- SUBCATCHMENT
- REACH/DESIGN POINT



PROFESSIONAL ENGINEER  
WILLIAM A. DAVIDSON  
0-9941-1  
U.S. VIRGIN ISLANDS

10/30/25

10/15/25

DATE

2

1

REV.

ISSUED FOR DPNR STT CZM COMMITTEE REVIEW AND APPROVAL

ISSUED FOR DPNR & DPW PERMITTING — NOT FOR CONSTRUCTION

REVISION DESCRIPTION

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DATE: SEPTEMBER 5, 2024

SCALE: AS SHOWN

DESIGNED BY  
SES

DRAWN BY  
SES

CHECKED BY  
WRD

APPLICANT  
STF SOLAR, LLC  
A VIELECTRON, LLC COMPANY  
5000 EST ENGLISH ST. 4A, PMB 146  
SAINT JOHN, VI 00830

PROJECT  
PROPOSED SOLAR ENERGY FACILITY (PHASE 1)  
FORTUNA 3B & 2 WEST END QTR  
ESTATE PERSEVERANCE  
SAINT THOMAS, VI 00802

PRE-DEVELOPMENT  
WATERSHED MAP

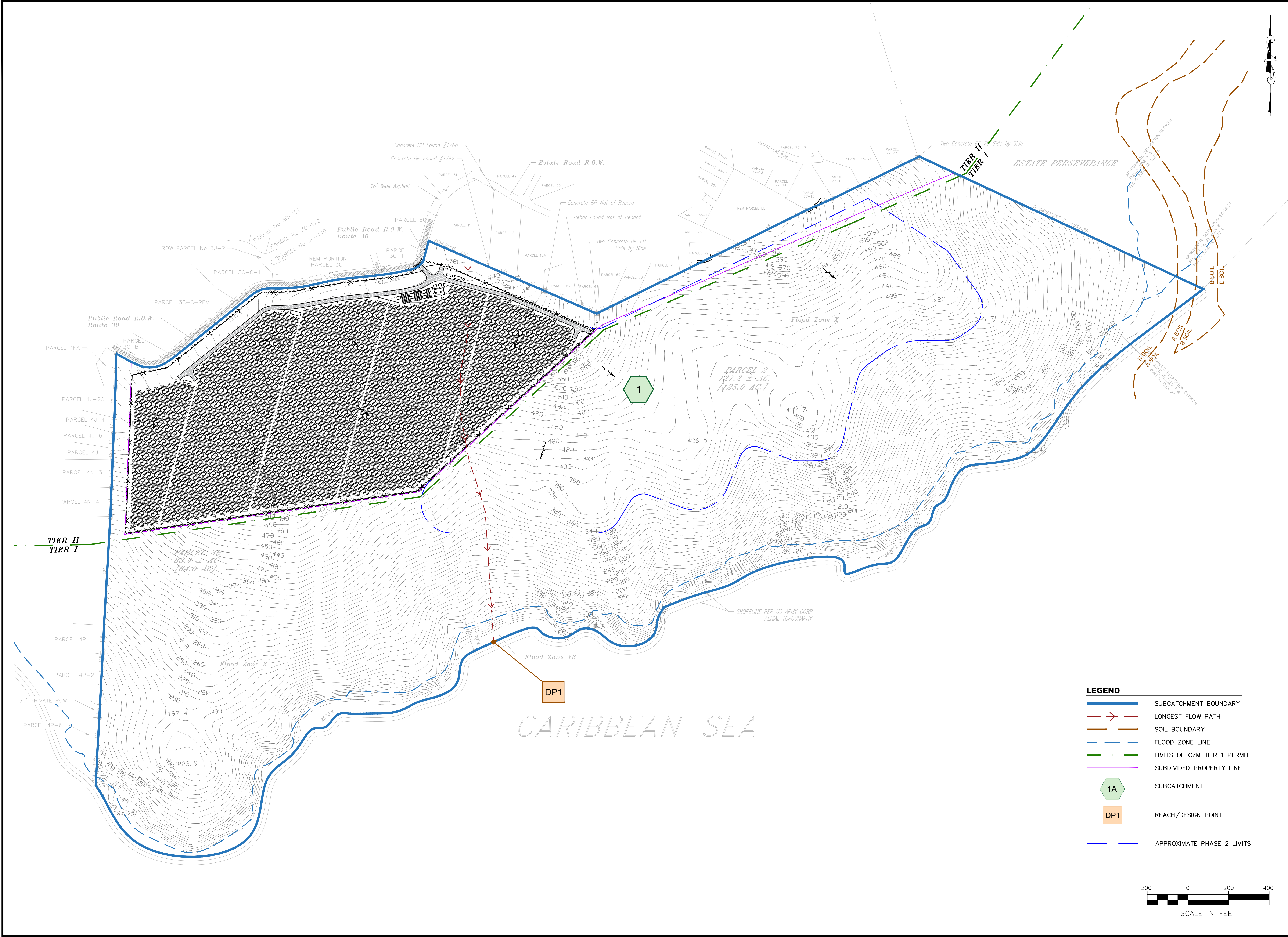
DR1

PROJECT NO. 23.141001.00

SHEET 1 OF 2

## Appendix D - Post-Development Watershed Map





PROFESSIONAL ENGINEER  
WILLIAM A. DAVIDSON  
0-9394-1  
U.S. VIRGIN ISLANDS

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APPLICANT  
STF SOLAR, LLC  
A VIELECTRON, LLC COMPANY  
5000 EST ENIGHER STA 4A, PNB 146  
SAINT JOHN, VI 00830

PROJECT  
PROPOSED SOLAR ENERGY FACILITY (PHASE 1)  
FORTUNA 3B & 2 WEST END QTR  
ESTATE PERSEVERANCE  
SAINT THOMAS, VI 00802

POST-DEVELOPMENT  
WATERSHED MAP  
**DR2**  
PROJECT NO. 23.141001.00  
SHEET 2 OF 2

DATE: SEPTEMBER 5, 2024

SCALE: AS SHOWN

DESIGNED BY: SES

DRAWN BY: SES

CHECKED BY: WRD

2

1

ISSUED FOR DPNR STT CZM COMMITTEE REVIEW AND APPROVAL

ISSUED FOR DPNR & DPW PERMITTING - NOT FOR CONSTRUCTION

10/30/25

10/15/25

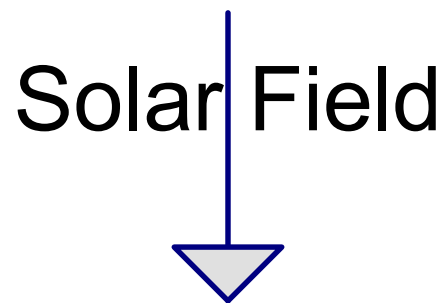
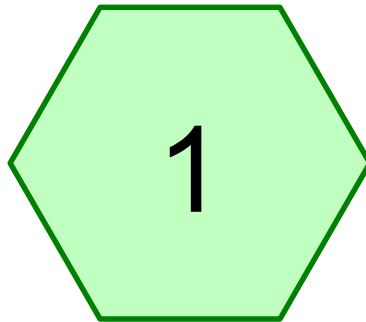
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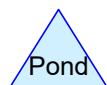
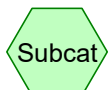
REVISION DESCRIPTION

## Appendix E – HydroCAD Analysis





Design Point 1



**Routing Diagram for Pre Dev - Fortuna**

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## Pre Dev - Fortuna

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Page 2

### Area Listing (all nodes)

| Area<br>(sq-ft)  | CN        | Description<br>(subcatchment-numbers) |
|------------------|-----------|---------------------------------------|
| 9,213,080        | 79        | Woods/grass comb., Good, HSG D (1)    |
| <b>9,213,080</b> | <b>79</b> | <b>TOTAL AREA</b>                     |

## Pre Dev - Fortuna

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### Soil Listing (all nodes)

| Area<br>(sq-ft)  | Soil<br>Group | Subcatchment<br>Numbers |
|------------------|---------------|-------------------------|
| 0                | HSG A         |                         |
| 0                | HSG B         |                         |
| 0                | HSG C         |                         |
| 9,213,080        | HSG D         | 1                       |
| 0                | Other         |                         |
| <b>9,213,080</b> |               | <b>TOTAL AREA</b>       |

**Pre Dev - Fortuna***Type II 24-hr 2-Yr Rainfall=3.82"*

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment 1: Solar Field**Runoff Area=9,213,080 sf 0.00% Impervious Runoff Depth>1.66"  
Flow Length=910' Tc=20.7 min CN=79 Runoff=415.07 cfs 1,275,176 cf**Reach DP1: Design Point 1**Inflow=415.07 cfs 1,275,176 cf  
Outflow=415.07 cfs 1,275,176 cf**Total Runoff Area = 9,213,080 sf Runoff Volume = 1,275,176 cf Average Runoff Depth = 1.66"**  
**100.00% Pervious = 9,213,080 sf 0.00% Impervious = 0 sf**

**Pre Dev - Fortuna***Type II 24-hr 10-Yr Rainfall=7.31"*

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment 1: Solar Field**

Runoff Area=9,213,080 sf 0.00% Impervious Runoff Depth&gt;4.52"

Flow Length=910' Tc=20.7 min CN=79 Runoff=1,108.78 cfs 3,470,590 cf

**Reach DP1: Design Point 1**

Inflow=1,108.78 cfs 3,470,590 cf

Outflow=1,108.78 cfs 3,470,590 cf

**Total Runoff Area = 9,213,080 sf Runoff Volume = 3,470,590 cf Average Runoff Depth = 4.52"**  
**100.00% Pervious = 9,213,080 sf 0.00% Impervious = 0 sf**

**Pre Dev - Fortuna**

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Type II 24-hr 10-Yr Rainfall=7.31"

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**Summary for Subcatchment 1: Solar Field**

Runoff = 1,108.78 cfs @ 12.13 hrs, Volume= 3,470,590 cf, Depth&gt; 4.52"

Routed to Reach DP1 : Design Point 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
Type II 24-hr 10-Yr Rainfall=7.31"

| Area (sf) | CN | Description                    |
|-----------|----|--------------------------------|
| 9,213,080 | 79 | Woods/grass comb., Good, HSG D |
| 9,213,080 |    | 100.00% Pervious Area          |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description                                |
|----------|---------------|---------------|-------------------|----------------|--------------------------------------------|
| 15.9     | 300           | 0.3067        | 0.31              |                | <b>Sheet Flow, Woods</b>                   |
|          |               |               |                   |                | Woods: Light underbrush n= 0.400 P2= 3.82" |
| 4.8      | 610           | 0.1771        | 2.10              |                | <b>Shallow Concentrated Flow, Woods</b>    |
|          |               |               |                   |                | Woodland Kv= 5.0 fps                       |
| 20.7     | 910           | Total         |                   |                |                                            |

**Summary for Reach DP1: Design Point 1**

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 9,213,080 sf, 0.00% Impervious, Inflow Depth &gt; 4.52" for 10-Yr event

Inflow = 1,108.78 cfs @ 12.13 hrs, Volume= 3,470,590 cf

Outflow = 1,108.78 cfs @ 12.13 hrs, Volume= 3,470,590 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

**Pre Dev - Fortuna**

*Type II 24-hr 25-Yr Rainfall=9.63"*

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment 1: Solar Field**

Runoff Area=9,213,080 sf 0.00% Impervious Runoff Depth>6.57"

Flow Length=910' Tc=20.7 min CN=79 Runoff=1,583.99 cfs 5,041,895 cf

**Reach DP1: Design Point 1**

Inflow=1,583.99 cfs 5,041,895 cf

Outflow=1,583.99 cfs 5,041,895 cf

**Total Runoff Area = 9,213,080 sf Runoff Volume = 5,041,895 cf Average Runoff Depth = 6.57"**  
**100.00% Pervious = 9,213,080 sf 0.00% Impervious = 0 sf**

**Pre Dev - Fortuna***Type II 24-hr 100-Yr Rainfall=13.70"*

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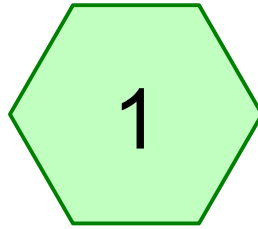
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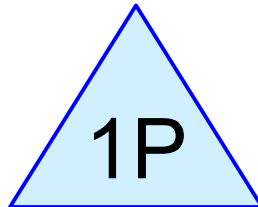
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment 1: Solar Field**Runoff Area=9,213,080 sf 0.00% Impervious Runoff Depth=10.24"  
Flow Length=910' Tc=20.7 min CN=79 Runoff=2,415.78 cfs 7,863,773 cf**Reach DP1: Design Point 1**Inflow=2,415.78 cfs 7,863,773 cf  
Outflow=2,415.78 cfs 7,863,773 cf**Total Runoff Area = 9,213,080 sf Runoff Volume = 7,863,773 cf Average Runoff Depth = 10.24"**  
**100.00% Pervious = 9,213,080 sf 0.00% Impervious = 0 sf**



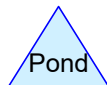
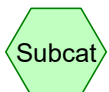
Solar Field



Rock Berm



Design Point 1



**Routing Diagram for Post Dev - Fortuna**

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## Post Dev - Fortuna

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### Area Listing (all nodes)

| Area<br>(sq-ft)  | CN        | Description<br>(subcatchment-numbers) |
|------------------|-----------|---------------------------------------|
| 4,015,770        | 80        | >75% Grass cover, Good, HSG D (1)     |
| 102,080          | 96        | Gravel surface, HSG D (1)             |
| 35,460           | 98        | Impervious area, HSG D (1)            |
| 5,059,770        | 79        | Woods/grass comb., Good, HSG D (1)    |
| <b>9,213,080</b> | <b>80</b> | <b>TOTAL AREA</b>                     |

## Post Dev - Fortuna

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### Soil Listing (all nodes)

| Area<br>(sq-ft)  | Soil<br>Group | Subcatchment<br>Numbers |
|------------------|---------------|-------------------------|
| 0                | HSG A         |                         |
| 0                | HSG B         |                         |
| 0                | HSG C         |                         |
| 9,213,080        | HSG D         | 1                       |
| 0                | Other         |                         |
| <b>9,213,080</b> |               | <b>TOTAL AREA</b>       |

**Post Dev - Fortuna***Type II 24-hr 2-Yr Rainfall=3.82"*

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment 1: Solar Field**

Runoff Area=9,213,080 sf 0.38% Impervious Runoff Depth>1.73"  
Flow Length=910' Tc=23.9 min CN=80 Runoff=397.26 cfs 1,329,108 cf

**Reach DP1: Design Point 1**

Inflow=398.38 cfs 1,327,115 cf  
Outflow=398.38 cfs 1,327,115 cf

**Pond 1P: Rock Berm**

Peak Elev=288.22' Storage=1,835 cf Inflow=397.26 cfs 1,329,108 cf  
Discarded=0.00 cfs 105 cf Primary=398.38 cfs 1,327,115 cf Outflow=398.38 cfs 1,327,220 cf

**Total Runoff Area = 9,213,080 sf Runoff Volume = 1,329,108 cf Average Runoff Depth = 1.73"**  
**99.62% Pervious = 9,177,620 sf 0.38% Impervious = 35,460 sf**

**Post Dev - Fortuna***Type II 24-hr 10-Yr Rainfall=7.31"*

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment 1: Solar Field**

Runoff Area=9,213,080 sf 0.38% Impervious Runoff Depth>4.63"  
Flow Length=910' Tc=23.9 min CN=80 Runoff=1,044.02 cfs 3,551,108 cf

**Reach DP1: Design Point 1**

Inflow=1,045.05 cfs 3,549,021 cf  
Outflow=1,045.05 cfs 3,549,021 cf

**Pond 1P: Rock Berm**

Peak Elev=290.21' Storage=1,835 cf Inflow=1,044.02 cfs 3,551,108 cf  
Discarded=0.00 cfs 134 cf Primary=1,045.05 cfs 3,549,021 cf Outflow=1,045.05 cfs 3,549,155 cf

**Total Runoff Area = 9,213,080 sf Runoff Volume = 3,551,108 cf Average Runoff Depth = 4.63"**  
**99.62% Pervious = 9,177,620 sf 0.38% Impervious = 35,460 sf**

**Post Dev - Fortuna**

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Type II 24-hr 10-Yr Rainfall=7.31"

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**Summary for Subcatchment 1: Solar Field**

Runoff = 1,044.02 cfs @ 12.17 hrs, Volume= 3,551,108 cf, Depth> 4.63"  
 Routed to Pond 1P : Rock Berm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Type II 24-hr 10-Yr Rainfall=7.31"

| Area (sf) | CN | Description                    |
|-----------|----|--------------------------------|
| * 35,460  | 98 | Impervious area, HSG D         |
| 102,080   | 96 | Gravel surface, HSG D          |
| 4,015,770 | 80 | >75% Grass cover, Good, HSG D  |
| 5,059,770 | 79 | Woods/grass comb., Good, HSG D |
| 9,213,080 | 80 | Weighted Average               |
| 9,177,620 |    | 99.62% Pervious Area           |
| 35,460    |    | 0.38% Impervious Area          |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description                                                         |
|----------|---------------|---------------|-------------------|----------------|---------------------------------------------------------------------|
| 17.5     | 300           | 0.3067        | 0.29              |                | <b>Sheet Flow, Dense Grass 6"-12"</b><br>n= 0.450 P2= 3.82"         |
| 2.4      | 405           | 0.2519        | 2.76              |                | <b>Shallow Concentrated Flow, Dense Grass 6"-12"</b><br>Kv= 5.5 fps |
| 4.0      | 205           | 0.0293        | 0.86              |                | <b>Shallow Concentrated Flow, Woods</b><br>Woodland Kv= 5.0 fps     |
| 23.9     | 910           | Total         |                   |                |                                                                     |

**Summary for Reach DP1: Design Point 1**

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 9,213,080 sf, 0.38% Impervious, Inflow Depth > 4.62" for 10-Yr event  
 Inflow = 1,045.05 cfs @ 12.17 hrs, Volume= 3,549,021 cf  
 Outflow = 1,045.05 cfs @ 12.17 hrs, Volume= 3,549,021 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

**Summary for Pond 1P: Rock Berm**

[92] Warning: Device #2 is above defined storage  
 [92] Warning: Device #3 is above defined storage  
 [93] Warning: Storage range exceeded by 5.21'  
 [95] Warning: Outlet Device #2 rise exceeded  
 [88] Warning: Qout>Qin may require smaller dt or Finer Routing

**Post Dev - Fortuna**

Type II 24-hr 10-Yr Rainfall=7.31"

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Inflow Area = 9,213,080 sf, 0.38% Impervious, Inflow Depth > 4.63" for 10-Yr event  
 Inflow = 1,044.02 cfs @ 12.17 hrs, Volume= 3,551,108 cf  
 Outflow = 1,045.05 cfs @ 12.17 hrs, Volume= 3,549,155 cf, Atten= 0%, Lag= 0.0 min  
 Discarded = 0.00 cfs @ 6.30 hrs, Volume= 134 cf  
 Primary = 1,045.05 cfs @ 12.17 hrs, Volume= 3,549,021 cf  
 Routed to Reach DP1 : Design Point 1

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Peak Elev= 290.21' @ 12.17 hrs Surf.Area= 1,130 sf Storage= 1,835 cf

Plug-Flow detention time= 0.4 min calculated for 3,537,364 cf (100% of inflow)  
 Center-of-Mass det. time= 0.2 min ( 780.9 - 780.7 )

| Volume | Invert  | Avail.Storage | Storage Description                                                                          |
|--------|---------|---------------|----------------------------------------------------------------------------------------------|
| #1     | 280.00' | 1,835 cf      | <b>Custom Stage Data (Prismatic)</b> Listed below (Recalc)<br>4,588 cf Overall x 40.0% Voids |

| Elevation<br>(feet) | Surf.Area<br>(sq-ft) | Inc.Store<br>(cubic-feet) | Cum.Store<br>(cubic-feet) |
|---------------------|----------------------|---------------------------|---------------------------|
| 280.00              | 705                  | 0                         | 0                         |
| 285.00              | 1,130                | 4,588                     | 4,588                     |

| Device | Routing   | Invert  | Outlet Devices                                                                                                                                                                                                                                                                                  |
|--------|-----------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| #1     | Discarded | 280.00' | <b>0.100 in/hr Exfiltration over Surface area</b>                                                                                                                                                                                                                                               |
| #2     | Primary   | 285.00' | <b>40.00' long x 5.00' breadth x 5.00' high Rock Fill</b><br>Rock Diam.= 6.000", S.D.= 2.000", Voids= 40.0%                                                                                                                                                                                     |
| #3     | Primary   | 286.00' | <b>40.0' long + 0.3 ' SideZ x 5.0' breadth Broad-Crested Rectangular Weir</b><br>Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00<br>2.50 3.00 3.50 4.00 4.50 5.00 5.50<br>Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65<br>2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88 |

**Discarded OutFlow** Max=0.00 cfs @ 6.30 hrs HW=285.12' (Free Discharge)  
 ↑ **1=Exfiltration** (Exfiltration Controls 0.00 cfs)

**Primary OutFlow** Max=1,034.60 cfs @ 12.17 hrs HW=290.18' (Free Discharge)  
 ↑ **2=Rock Fill** (Rockfill Controls 83.21 cfs @ 0.83 fps)  
 ↑ **3=Broad-Crested Rectangular Weir** (Weir Controls 951.39 cfs @ 5.52 fps)

**Post Dev - Fortuna***Type II 24-hr 25-Yr Rainfall=9.63"*

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment 1: Solar Field**

Runoff Area=9,213,080 sf 0.38% Impervious Runoff Depth>6.68"  
Flow Length=910' Tc=23.9 min CN=80 Runoff=1,484.27 cfs 5,131,396 cf

**Reach DP1: Design Point 1**

Inflow=1,484.00 cfs 5,129,448 cf  
Outflow=1,484.00 cfs 5,129,448 cf

**Pond 1P: Rock Berm**

Peak Elev=291.22' Storage=1,835 cf Inflow=1,484.27 cfs 5,131,396 cf  
Discarded=0.00 cfs 141 cf Primary=1,484.00 cfs 5,129,448 cf Outflow=1,484.00 cfs 5,129,589 cf

**Total Runoff Area = 9,213,080 sf Runoff Volume = 5,131,396 cf Average Runoff Depth = 6.68"**  
**99.62% Pervious = 9,177,620 sf 0.38% Impervious = 35,460 sf**

**Post Dev - Fortuna***Type II 24-hr 100-Yr Rainfall=13.70"*

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment 1: Solar Field**

Runoff Area=9,213,080 sf 0.38% Impervious Runoff Depth=10.37"  
Flow Length=910' Tc=23.9 min CN=80 Runoff=2,253.63 cfs 7,959,580 cf

**Reach DP1: Design Point 1**

Inflow=2,250.90 cfs 7,957,882 cf  
Outflow=2,250.90 cfs 7,957,882 cf

**Pond 1P: Rock Berm**

Peak Elev=292.85' Storage=1,835 cf Inflow=2,253.63 cfs 7,959,580 cf  
Discarded=0.00 cfs 142 cf Primary=2,250.90 cfs 7,957,882 cf Outflow=2,250.91 cfs 7,958,024 cf

**Total Runoff Area = 9,213,080 sf Runoff Volume = 7,959,580 cf Average Runoff Depth = 10.37"**  
**99.62% Pervious = 9,177,620 sf 0.38% Impervious = 35,460 sf**